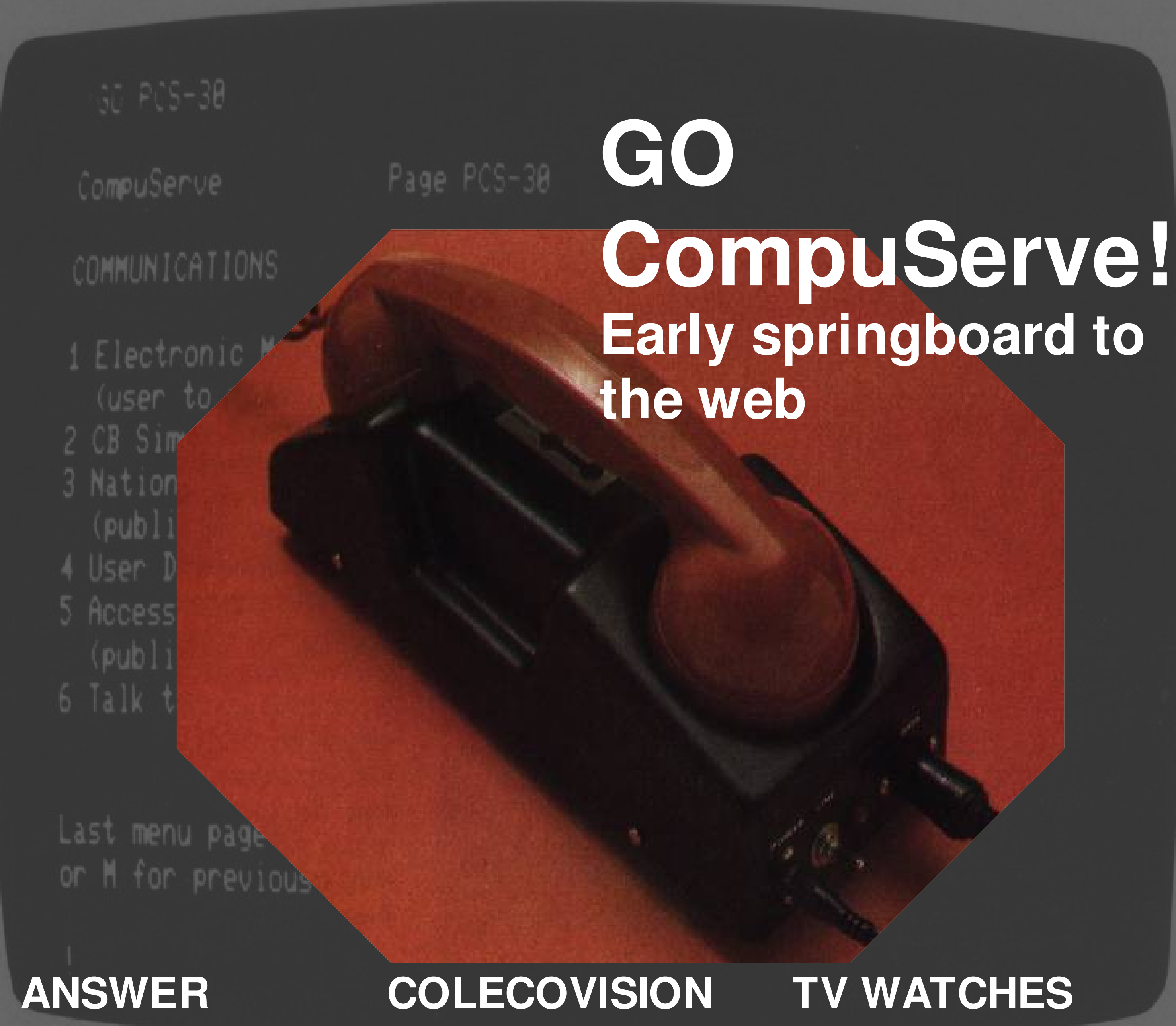
VINTAGE TECHNOLOGY

History of computers, video games, calculators, radio, tv and audio in the digital age

Issue 4 : March 2008



GO CompuServe!

Early springboard to the web

ANSWER MACHINES

of the 70s & 80s

COLECOVISION

The arcade brought to the home

TV WATCHES

Legacy of the Seiko TV-Watch

PLUS: I ♥ Tandy CoCo • When mice ran on wheels • Sinclair calculators
Mattel handheld games • First one-way teletext services • Adjusting CRT monitors

Vintage Technology

WELCOME

Thanks to all those who have sent details of vintage technology related events – particularly in non-English speaking countries. Please tell us about any more events in these countries.
For those into the history of communications pre-Internet, there are some great articles on the original Compuserve and teletext services this month.
Check out the ColecoVision, Sinclair, Tandy CoCo, Mattel and Technics stuff if you like your hardware.
If you feel like tinkering with a screwdriver, have a look at Ray's tips on page 32 and finally go straight to page 30 if you have the urge to buy 20 broken computers…

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Nostalgia

The Atari user shows 38

ABS Icon Wrist Watch - inspired by 8-bit gaming

If you love your retro games, why not show it? And you can with the ABS Icon Wrist Watch.

It's a blocky wristwatch inspired by the blocky pixels of the 8-bit gaming world. Think of it as the watch Mario might wear. The only downside is the features - just time-telling here, although that minimalist look should certainly catch the eye.

Available from Korean retailer Funshop, you can pick up one for the equivalent of £42.

Tron is back – on Xbox Live Arcade

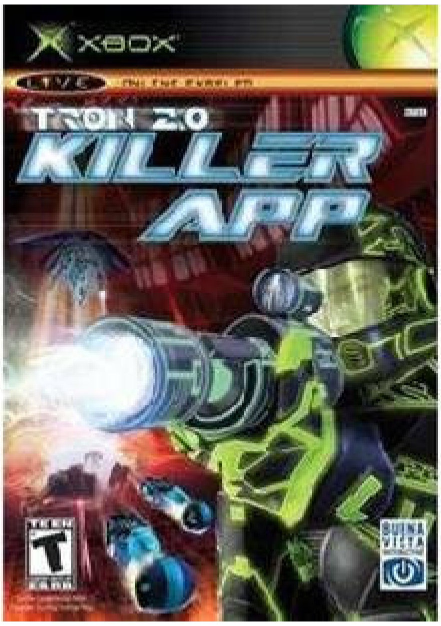
The arcade classic is back! And *Tron* is even better this time around with enhanced graphics, CD-quality sound and two-person multiplayer features.

Battle as mighty video warrior Tron against the insidious Master Control Program and his ruthless right-hand man, Sark. Tron offers a retro-futuristic test of gaming ability. Race life cycles, demolish tanks, dodge grid bugs, and even face off against the MCP himself to find out who truly rules the computer world!

- Enhanced original: *Tron* is a perfect recreation of the classic arcade game based on the pioneering computer animated Disney film. Authentic graphics, game play and audio have all been upgraded to take advantage of the high-definition graphics and CD bit rate quality of Xbox 360.
- Light cycles rule: Now you can be a part of the most famous scene from the movie. Ride your blue cycle and battle the enemy yellow cycles in a gridline battle royale.
- Great game play elements: Exterminate the Grid Bugs and escape into the I/O Tower before time runs out. Demolish all enemy tanks and Recognizers to clear the board. Smash the blocks and move your character into the MCP cone to clear the level. A bonus is awarded if you destroy all the blocks.
- Multiplayer capability: The original arcade game was single player only. Now, Xbox LIVE Arcade brings you the first version of the game with two-person multiplayer functionality.

Korg Introduces Limited Edition X50 And microKorg Keyboards

Designed to help players better express their individuality and style, Korg unveils special limited edition versions of its popular X50 and microKORG synths. Each new model has a distinct look that offers players a unique stage presence as well as built-in collector's value.



With aesthetics that are both retro and contemporarily hip, each synth features a bold design: the body of the Limited Edition X50 (X50-CF) is covered in a camouflage finish, and the Limited Edition microKORG (microKORG-BK) features vintage-style, reverse-color keys (the black and white colors are reversed). Both keyboards provide the same functions and features as their regular line counterparts.

Both models will be in stores by February 2008 at select KORG dealers. The limited edition versions and the regular line offerings will be available concurrently. The microKORG-BK has an MSRP of $550.00.The X50-CF has an MSRP of $950.00.

The lightweight, 61-key X50 synthesizer delivers high-quality sounds, a user friendly interface and convenient USB computer connectivity in a streamlined package designed for performing and computer-based musicians. It features Korg's HI (Hyper Integrated) synthesis technology as found in the acclaimed TRITON series. Its modern, stylish body contains integrated handles for easy transport.

The microKORG is a portable, affordable synthesizer offering a variety of tools for performers, producers, computer musicians and beginners alike. It delivers modelling synthesis, vocoding, real-time control, onboard effects and external audio processing, plus Korg's renowned quality and sound. The microKORG's 37-mini-key compact chassis also makes it ideal for musicians or DJs working in a limited-space environment.

For more information, visit their web site at www.korg.com.

Gaming legends return to challenge a new generation

For a relatively youthful medium, video gaming has a profound sense of its own history.

The majority of popular franchises — Mario, Madden, “The Sims,” “Final Fantasy” have their roots in the 1980s, -practically ancient times in today’s accelerated pop culture.

Such series remain successful because their creators are always adding elements and adapting to the latest technology. But there’s still the element of nostalgia: Hearing the familiar “Legend of Zelda” theme in a new game always brings a rush of memories for those of us who played the 1987 original.

But there are still plenty of ’80s and ’90s video-game characters that have faded into oblivion. Whatever happened to Alex Kidd, Bonk and Earthworm Jim?

Will Nintendo ever give us a sequel to the beloved “Earthbound”? Wouldn’t a 3-D version of “Splatterhouse” be awesome? After all, if Sega could revive an obscurity like “Nights Into Dreams,” then anything’s possible.

•“Nights: Journey of Dreams” (Sega, for the Wii, $49.99): “Nights Into Dreams” was released in 1996 for the Sega Saturn, a slick console that got buried in the marketplace by Sony’s PlayStation. Thus, not many people played the original, although it’s developed a reputation as an overlooked classic.

In this long-awaited sequel, Nights (or, as Sega annoyingly spells it, NiGHTS) is an androgynous jester who leads two kids through the dream world of Nightopia.

The dream world is under attack from a darker place called Nightmare, but the kids can merge with Nights to fight the monsters. Most of the action involves flying around, collecting blue chips and soaring through rings, although there is an impressive amount of variety between levels.

Unfortunately, you’re often thrown into new levels without much indication of what you’re supposed to do. And for a game that’s supposed to impart the freedom of flying, the controls are surprisingly stiff. (The use of the Wii motion-sensing ability, in particular, is just awful.) There are some innovative ideas and beautiful images here, but “Journey of Dreams” doesn’t have the polish needed to revive the “Nights” brand.

•“Sonic Riders: Zero Gravity” (Sega, for the Wii, $49.99; for the PlayStation 2, $39.99): Sonic the Hedgehog has been a video-game mainstay since his 1991 debut on Sega’s Genesis. Sadly, only a few of the dozen or so titles he’s had have been really good. With 2006’s “Sonic Riders,” Sega saw fit to put the already speedy Sonic and his pals on hover boards and other vehicles, morphing the series into an all-out racing game, a la “WipeOut.” “Zero Gravity” adds “gravity points” that you can earn by performing tricks; you can use the points to find alternate routes or make your character race even faster. The high-speed high jinks are fun for a while, but “Zero Gravity” burns out because it’s too fast. When you’re hurtling down its futuristic tracks, it’s hard to see the power-ups or other gimmicks you can use against your opponents. There’s a ridiculous story mode for solo players, as well as a nearly unplayable soccer like game, but if you’re looking for a fast-paced racer to play with friends, “Zero Gravity” is worth a rental.

•“Contra 4” (Konami, for the DS, $29.99): When “Contra” arrived in arcades in 1987, the Reagan administration’s Iran-Contra scandal was in full swing. The game had nothing to do with Nicaragua’s counter-revolutionaries; instead, it followed the efforts of two commandos, Bill Rizer and Lance Bean, to repel an alien invasion.

Rizer and Bean are back in “Contra 4,” and their first DS mission harks back to the original. The bulk of the action consists of running sideways and shooting everything that moves, with the occasional use of a grappling hook to leap into the DS’ top screen. It’s intense run-and-gun action, and it’s very satisfying.

It’s also extraordinarily difficult, just like in the old days. Indeed, if you want to show the young ’uns how we played 20 years ago, you can’t get much closer than “Contra 4.” ■

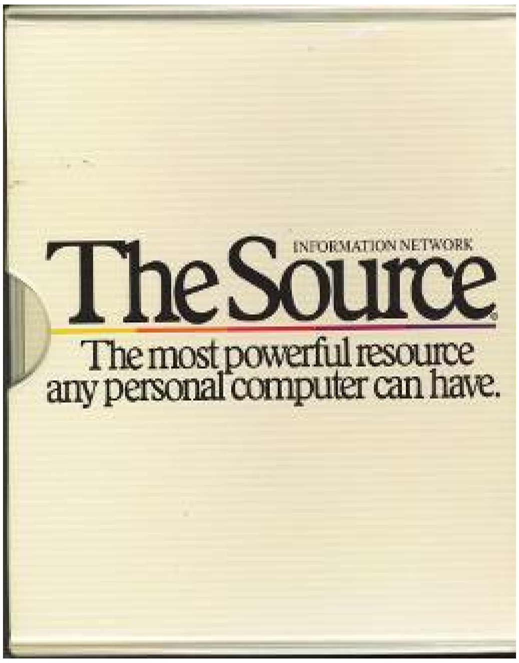
GO CompuServe!

CompuServe acted as a springboard to people's first experiences of getting information online, sending email and eventually, surfing the web.

Many people, particular early internet users in the 90s will remember CompuServe. It was not completely reliable, it cost more than we liked and it directed us to mainly in-house information. Either way, it provided one of the few ways of getting online in these early days.

CompuServe was founded in 1969 as Compu-Serv Network, Inc. in Columbus, Ohio as a subsidiary of the Golden United Corporation which sold life insurance.

To increase revenues for GUC it was decided to use Compu-Serv to sell computer time sharing services as well as



provide internal computer support. Other companies would rent time on their PDP 10 computers.

In the early 1970s Compu-Serv offered applications to go with the basic time sharing services such as financial forecasting, sales analysis, inventory analysis and experimental design. They offered custom portals for the airline industry lawyers and other professions.

In 1977 Compu-Serv changed its name to CompuServe and became an independent company.

One of the reasons for CompuServe's success in the early years, was it's readiness to change with the times. With the boom in personal computers in the late 1970s, CompuServe was quick to offer an online service to these users. The CompuServe service, along with rival The Source, were the first major commercial online services offeredin the USA.

By the mid-1980s CompuServe was one of the largest information and networking services companies in existence

CompuServe's time sharing computers were mostly unused after peak hours and the company wanted to generate revenue from computer use in these hours. The service they offered personal computer users was in these off peak (evening) hours.

In 1980 H & R Block bought CompuServe and with their large financial backing, they enabled CompuServe to develop and expand their online services. They created the MicroNet service for personal computer users and this then went on to be called the CompuServe Information Service (CIS).

Initially it was thought that the online service would be used to provide software and applications, but the most popular reason for users going online through MicroNet and then CIS, was for the email, forums and live chat.
Email had been used in the mid 1970s in its Infoplex service for business users, and then in 1980 they developed the CB Simulator (after CB radio), which was a real time chat service.

MicroNet was marketed primarily to Radio Shack's TRS-80 computer users who had to pay $5 per hour after an initial $9 start-up charge, which would also give them each 128K of storage on the service.

Around 1981, CompuServe introduced their CompuServe B protocol, - a file transfer protocol, allowing users to send files to each other. This was later expanded to the higher-performance B+ version, intended for downloads from CIS itself.

Another major unit of CompuServe, CompuServe Network Services, was formed in 1982 to generate revenue by selling connectivity on the nationwide packet network that it had built to support its timesharing service. The network presented a standard X.25 interface to the outside world, providing dialup connectivity to corporate hosts, giving CompuServe the largest selection of local dialup phone connections in the world.

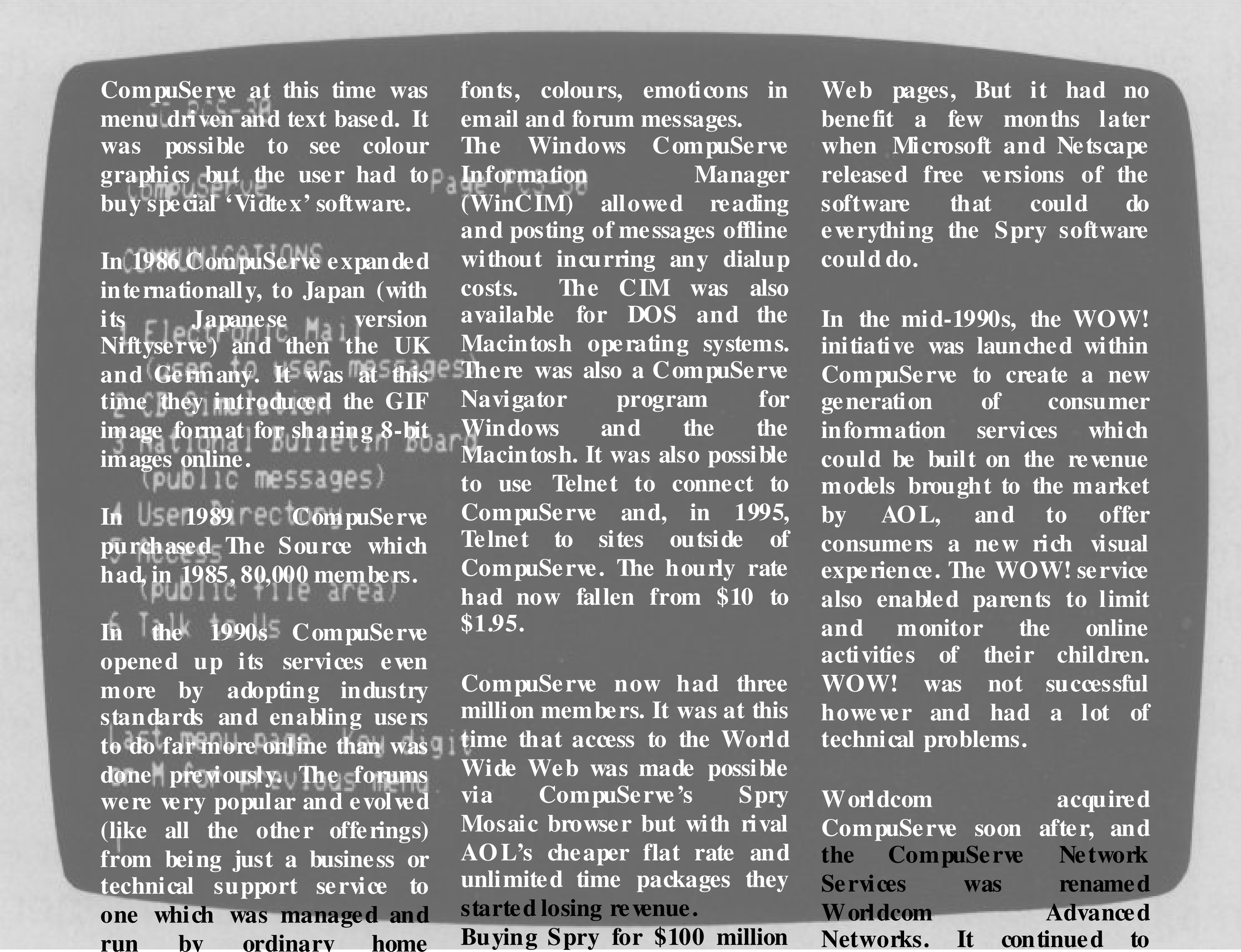
Other networks permitted CompuServe access to still more locations, including international locations, usually with substantial connect-time surcharges. It was not unusual in the early 1980s for a business user to have to pay a $30-per-hour charge to connect to CompuServe. This resulted in the company being nicknamed 'CompuSpend' , 'Compu$erve' or 'CI$'.

At this time a user could access online pages on a variety of subjects including news, email, games, financial services, stock quotes, weather, medical information, legal services and a searchable index of all CIS services.

The email/message program was not very user friendly – indeed its name 'Filge' (File Generator and Editor) was taken from the old mainframe days.
There were also Special Interest Groups (SIGs) for lawyers, doctors, pilots, writers etc all managed by sysops

It was fairly easy to navigate around the system – the user would enter the menu number of the option or page they wanted, as each page had a menu with different options. The word 'GO' plus the page name could also be typed if the user knew the name of the page they wanted. The TOP command would take the user back to the initial menu screen.

By the mid-1980s CompuServe was one of the largest information and networking services companies in existence, and was the largest consumer information service in the world. It had the largest number of subscribers (100,000), although only half of all its revenues at this time came from its online consumer services.



CompuServe at this time was menu driven and text based. It was possible to see colour graphics but the user had to buy special 'Vidtex' software.

In 1986 CompuServe expanded internationally, to Japan (with its Japanese version Niftyserve) and then the UK and Germany. It was at this time they introduced the GIF image format for sharing 8-bit images online.

In 1989 CompuServe purchased The Source which had, in 1985, 80,000 members.

In the 1990s CompuServe opened up its services even more by adopting industry standards and enabling users to do far more online than was done previously. The forums were very popular and evolved (like all the other offerings) from being just a business or technical support service to one which was managed and run by ordinary home computer users. fonts, colours, emoticons in email and forum messages.

The Windows CompuServe Information Manager (WinCIM) allowed reading and posting of messages offline without incurring any dialup costs. The CIM was also available for DOS and the Macintosh operating systems. There was also a CompuServe Navigator program for Windows and the Macintosh. It was also possible to use Telnet to connect to CompuServe and, in 1995, Telnet to sites outside of CompuServe. The hourly rate had now fallen from $10 to $1.95.

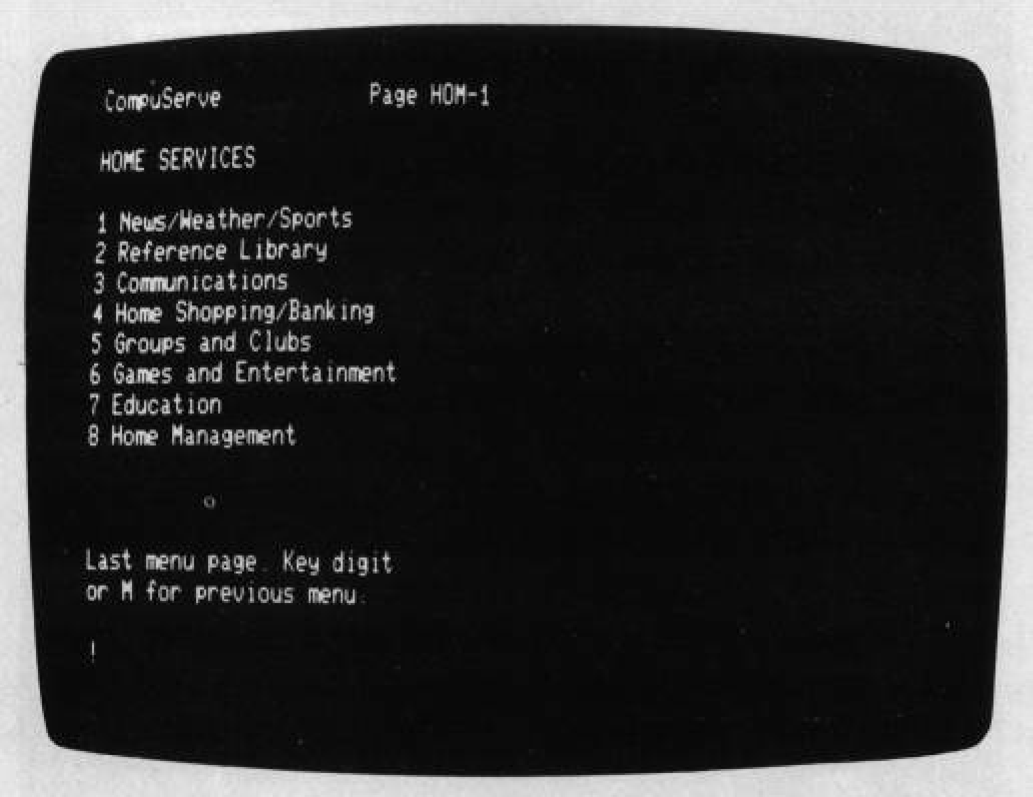
CompuServe now had three million members. It was at this time that access to the World Wide Web was made possible via CompuServe's Spry Mosaic browser but with rival AOL's cheaper flat rate and unlimited time packages they started losing revenue.

Buying Spry for $100 million helped CompuServe allow its Web pages, But it had no benefit a few months later when Microsoft and Netscape released free versions of the software that could do everything the Spry software could do.

In the mid-1990s, the WOW! initiative was launched within CompuServe to create a new generation of consumer information services which could be built on the revenue models brought to the market by AOL, and to offer consumers a new rich visual experience. The WOW! service also enabled parents to limit and monitor the online activities of their children. WOW! was not successful however and had a lot of technical problems.

Worldcom acquired CompuServe soon after, and the CompuServe Network Services was renamed Worldcom Advanced Networks. It continued to operate as a discrete company within Worldcom after being combined with AOL's network subsidiary, ANS, and an existing Worldcom networking company called Gridnet.

In September 2003 CompuServe Information Service, now a division of AOL, added CompuServe Basic to its product lines, selling it via Netscape.com. ■



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CompuServe          Page HOM-1

HOME SERVICES

1 News/Weather/Sports
2 Reference Library
3 Communications
4 Home Shopping/Banking
5 Groups and Clubs
6 Games and Entertainment
7 Education
8 Home Management

Last menu page. Key digit
or M for previous menu.

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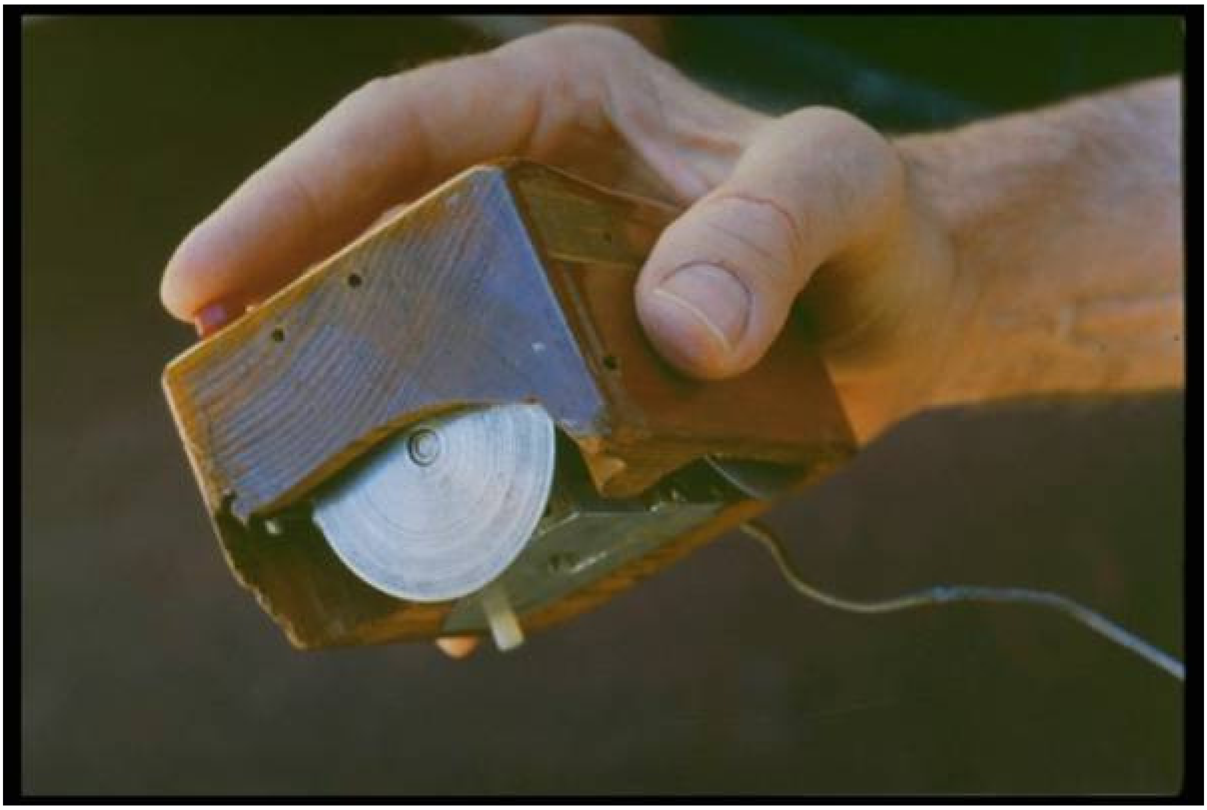
Back when mice ran on wheels…

The mouse was first developed by Douglas Engelbart in the mid 1960s at Stanford Research Laboratory as part of the oN-Line System (NLS) project to investigate ways of making computers easier to use.



Light pens had been used since the 1950s but researchers wanted to develop something to replace them that would be easier to use. Other objects were tested which exploited body movements – i.e. attaching a device to the head, but ultimately the mouse won out. With a mouse, the user did not need to have one hand on the monitor like a light pen and could still use a keyboard at the same time as using the mouse quite comfortably. Also the mouse did not block the screen like a light pen.

This first mouse, which was demonstrated publicly in 1968, was a large hand carved wooden block with one button on top and two metal wheels perpendicular to each other to mark the X-Y position. There is a ball bearing inside the mouse to provide support and potentiometers attached to the disk communicate signals through a wire to the computer and on to the video display.

Englebart was granted the patent for the mouse invention in November 1970 which described the mouse as an 'X-Y Position Indicator for a Display System'. Soon after this time though, this device was more commonly referred to as a mouse as it looked like a mouse with a long tail coming

Mouse.

out the end. This original mouse did not require a mousepad as its large wheels could roll on virtually any surface. However, most subsequent mice, starting with the steel ball mouse, needed mouse pads in order to perform effectively.

Bill English, who worked on building the first mouse with Engelbart, went on to work for Xerox Park and in 1972 developed the ball mouse which replaced the wheels with a single ball. The mouse used two rollers rolling against two sides of the ball which would detect the horizontal and vertical motion of the mouse. The motion of the rollers caused the two disc-like encoder wheels to rotate, interrupting optical beams to generate electrical signals. There were three buttons on the top and the outer casing was made of beige plastic.

This mouse was to be packaged with the Xerox Alto computer and is sometimes referred to as the Hawley mouse after Jack Hawley who manufactured mice for Xerox and, prior to this, for Stanford Research Institute.

Whereas Engelbart has envisaged using a mouse at the same time as a keyboard, the Xerox method involved using a keyboard with both hands and then using the mouse with one hand as and when needed.

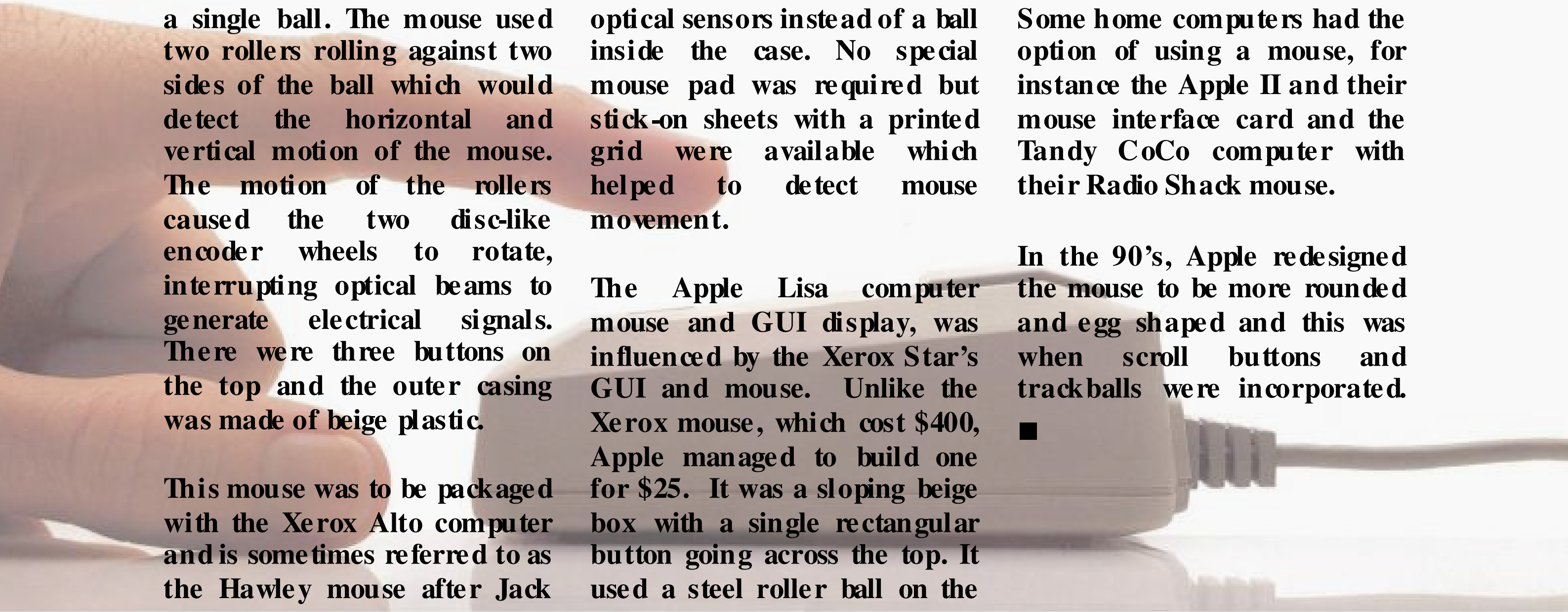
The 1981 Xerox 8010 Star mouse was the first commercially produced mouse. The display screen had icons and windows and which could be manipulated and 'double-clicked' on by the beige 2-button mouse. This mouse had optical sensors instead of a ball inside the case. No special mouse pad was required but stick-on sheets with a printed grid were available which helped to detect mouse movement.

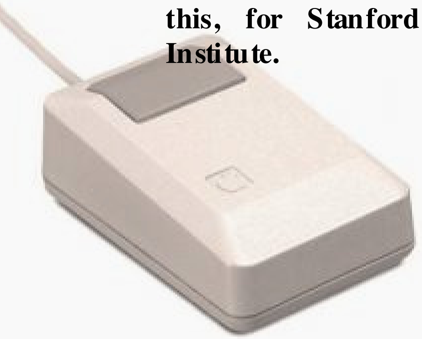
The Apple Lisa computer mouse and GUI display, was influenced by the Xerox Star's GUI and mouse. Unlike the Xerox mouse, which cost $400, Apple managed to build one for $25. It was a sloping beige box with a single rectangular button going across the top. It used a steel roller ball on the underside and connected to the computer via a DE-9 connector.

This mouse design then remained pretty much the same for the next 20 years. The Apple Macintosh computer, followed by the IBM PC was the turning point in mouse use being the norm rather than the exception or just a gimmick. The steel roller ball was swapped for a rubber ball and the outer colour varied slightly but were all mainly a beige or grey colour. IBM introduced the PS/2 interface in the late 80's for keyboards and mice, which was then adopted by others.

Some home computers had the option of using a mouse, for instance the Apple II and their mouse interface card and the Tandy CoCo computer with their Radio Shack mouse.

In the 90's, Apple redesigned the mouse to be more rounded and egg shaped and this was when scroll buttons and trackballs were incorporated. ■





I ♥ my Tandy CoCo

One of the 80's best kept secrets was the unassuming but powerful Color Computer range from Tandy, which still has a loyal fanbase.

The TRS-80 Color Computer (nicknamed 'CoCo'), was conceived in the late 1970s as a low cost videotex system for farmers. When it was released in 1980, it shared the same silver/grey case with black keybord surround, and chiclet-style upper case keys, as the AgVision videotex terminals.

The CoCo had a Motorola MC6809E processor running at 1.79Mhz, 4K of RAM, an 8K Microsoft BASIC interpreter on an internal ROM, 9 colours, 256 x 192 screen resolution and cost $399. It was designed to be hooked up to a colour TV and cassette tape player, and could also be connected to a floppy disk drive, joysticks, printer, modem and 'program pak' cartridges. Other accessories included a digitiser tablet, hard drive controller, voice synthesiser, 80 column display adapter, RS232 interface, stereo music adapter and it was also the first Tandy computer that could use a mouse.

Later versions of the first CoCo had a white case with larger keys on the keyboard and could have 16K, 32K or 64K RAM with Extended Color Basic.

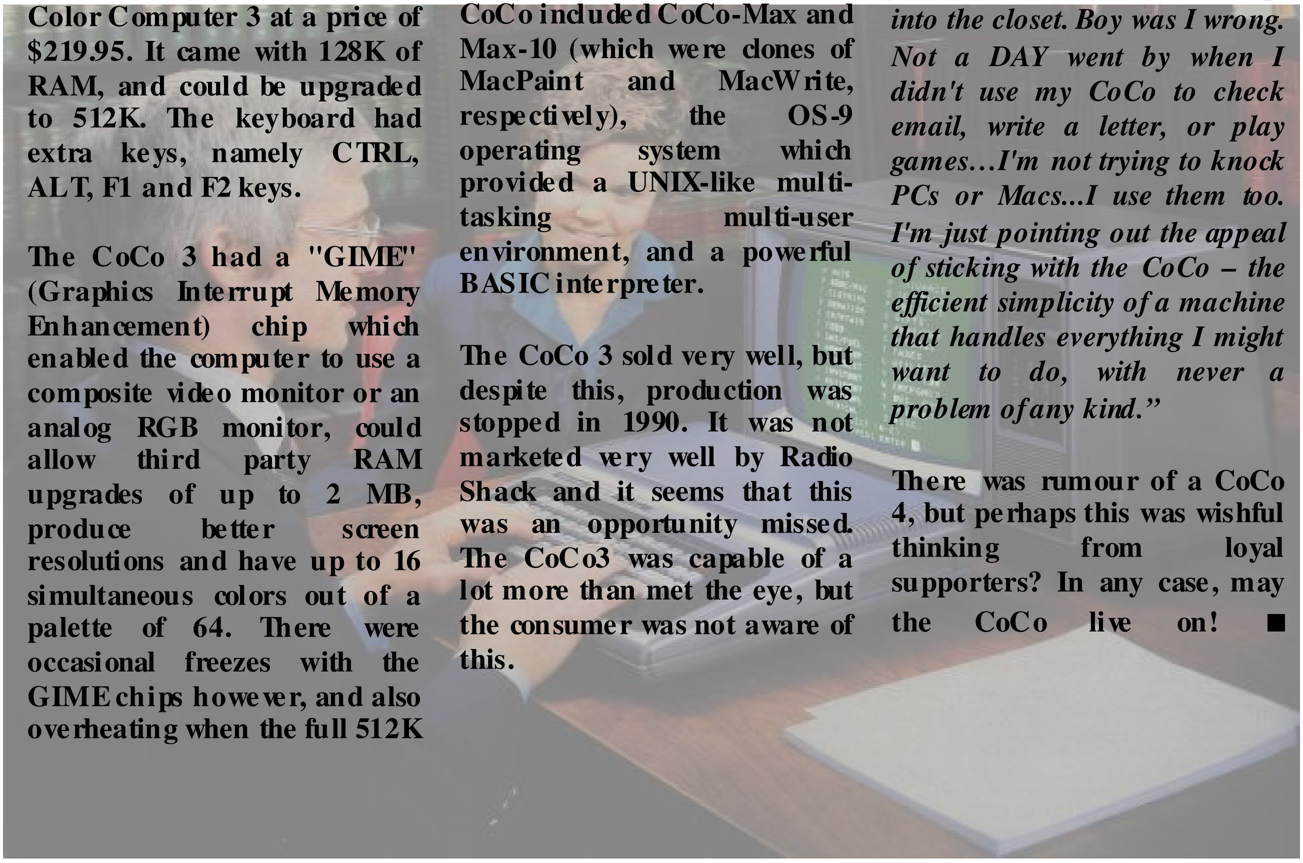
The TRS-80 Color Computer II came out in 1982, which was very similar to, and fully compatible with, the CoCo 1. The case was smaller and later versions (called 'Tandy Color Computer 2' instead of 'TRS-80 Color Computer 2') could handle lower case letters and

the ability to change the text screen border colour.

At this time a Deluxe Color Computer and Ethernet interface was proposed, but these were never produced.

There were a few CoCo clones produced in the world at this time. The British clone, the Dragon 32/64, was very popular and featured a centronics parallel printer port. In Brazil, there existed several CoCo-clones, including the Prologica CP400 Color, CP400 Color II, the Varixx VC50 and the LZ Color64. In Mexico, the Micro-SEP was intended to be distributed nationally to all the public schools.

> “There's a reason why people just will not give up their CoCos. These things were the best-kept secret of the 1980s, and are still easy and fun to use.”(*L.Greenfield*)



In 1986, Tandy announced the Color Computer 3 at a price of $219.95. It came with 128K of RAM, and could be upgraded to 512K. The keyboard had extra keys, namely CTRL, ALT, F1 and F2 keys.

The CoCo 3 had a "GIME" (Graphics Interrupt Memory Enhancement) chip which enabled the computer to use a composite video monitor or an analog RGB monitor, could allow third party RAM upgrades of up to 2 MB, produce better screen resolutions and have up to 16 simultaneous colors out of a palette of 64. There were occasional freezes with the GIME chips however, and also overheating when the full 512K was added. It was possible to add a fan to counter this problem however.

With these features, the CoCo 3 was a powerful computer but much cheaper than contemporary computers such as the Apple Macintosh. All of the CoCo computers had superior processing power which in itself was more expensive than the 6502 or other CPUs at the time. To keep the computers at a reasonable price for consumers, they did not have the superior sound and graphics hardware of rival Commodore and Atari machines. As a result, the CoCo was not the first choice of computer for gamers and did not have many licensed ports of popular games.

Some of the more sophisticated programs for the CoCo included CoCo-Max and Max-10 (which were clones of MacPaint and MacWrite, respectively), the OS-9 operating system which provided a UNIX-like multi-tasking multi-user environment, and a powerful BASIC interpreter.

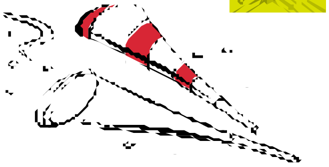
The CoCo 3 sold very well, but despite this, production was stopped in 1990. It was not marketed very well by Radio Shack and it seems that this was an opportunity missed. The CoCo3 was capable of a lot more than met the eye, but the consumer was not aware of this.

The Tandy Color Computer 3

It is great that the CoCo still has a small but active user community after all these years. It is testament to the versatility of these computers and the fact that useful and entertaining things can be done on ‘obselete’ hardware. For instance it is possible to surf the web using a CoCo (albeit using a text browser like Lynx) and it also has the added bonus of practically being immune to viruses. Utilities also exist to transfer files from a PC to a CoCo.

CoCo fan Larry Greenfield says “*In August 1996, I bought my first non-CoCo computer -- a Toshiba 120Mhz Pentium laptop with 12.1 TFT and 6 x CD-ROM. At the time I thought I'd be using it everyday, and finally throw my CoCo set-up into the closet. Boy was I wrong. Not a DAY went by when I didn't use my CoCo to check email, write a letter, or play games…I'm not trying to knock PCs or Macs…I use them too. I'm just pointing out the appeal of sticking with the CoCo – the efficient simplicity of a machine that handles everything I might want to do, with never a problem of any kind.*”

There was rumour of a CoCo 4, but perhaps this was wishful thinking from loyal supporters? In any case, may the CoCo live on! ■



Vintage technology events

March 14th-16th, 2008

Grapevine, Texas, USA: Texas Pinball Festival – play on and buy classic video games and pinball machines. http://www.texaspinball.com/overview.htm

March 20th-22nd, 2008

Charlotte, USA: Antique Wireless Association - Carolinas Chapter, annual conference & Flea Market http://cc_awa.homestead.com/index.html

March 20th, 2008

London, UK: Computer Conservation Society lecture 'The BBC Micro and its legacy' http://www.computerconservationsociety.org/

March 29th-30th, 2008

Milwaukee, Wisconsin, USA: Midwest Gaming Classic – see and play classic arcade and video games, exhibitions and tournaments http://www.midwestgamingclassic.com/

March 30th, 2008

Northglenn, Colorado, USA: Vintage Voltage Expo – vintage radio, audio, records, electronics, TVs, video games and more. Contests, displays, lectures, shopping, swapmeet http://danacain.com/about5.html

April 4-5th, 2008

Mason, Michigan, USA: Telephone Collectors TCI Spring show. Social/pizza evening followed by Starbucks/Krispy Kremes on the Saturday. http://www.telephonecollectors.org/events/events.htm

April 12-13th, 2008

Chicago, USA: 17th Annual 'Last' CocoFEST organised by the Glenside Color Computer club. http://members.aol.com/clubbbs/glenside/

April 26-27th, 2008

Munich, Germany: 9th annual Vintage Computer Festival, Europe (VCFe). Speeches, exhibition, flea market, supercomputer excursion, trivia challenge http://www.vcfe.org/E/

A WHOLE WEEKEND OF GAME ROOM FUN-Leave your quarters at home!

The organizers of the Texas Pinball Festival are pleased to announce the return of the lone star state's largest pinball & gameroom show. The 2008 Texas Pinball Festival is being held the weekend of March 14th — 16th in Grapevine, Texas at the Hilton DFW Lakes Executive Conference Center, next to Grapevine Mills Mall. The biggest game room show in Texas just got better!

Over 125 pinball machines, arcade games and slot machines from the 1950's to present for sale and set on free play. Enjoy a variety of other adult and children tournaments throughout the weekend to test player's pinball skills against others for trophies and cash prizes. Coin-Op Swap Meet Saturday morning. Vendors selling parts, supplies, equipment and memorabilia all weekend. Door Prizes for pinball related memorabilia drawn hourly throughout the weekend, including a grand prize raffle drawing Sunday awarding a full size, coin operated Judge Dredd Pinball Machine. Open to the public, bring the family!

Price:

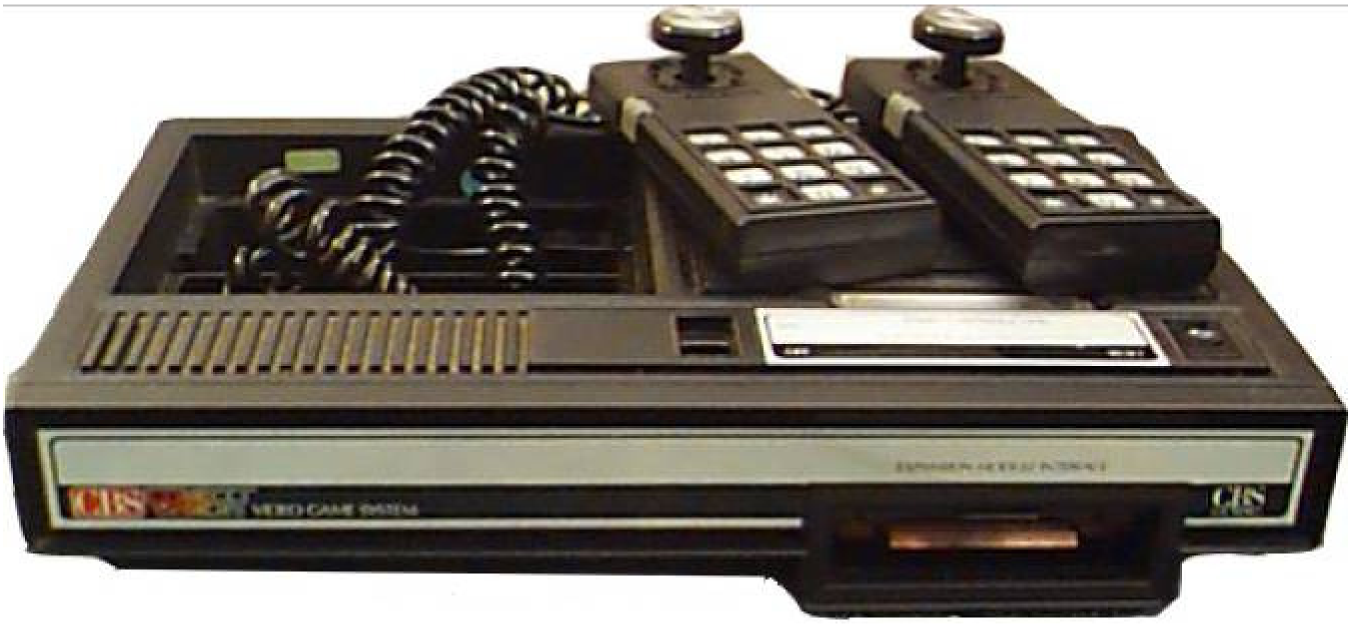
One Day Admission (Friday / Saturday): $15 Adults, $8 for Children (Ages 5-12)
One Day Admission (Sunday): $7 Adults, $5 for Children (Ages 5-12)
Weekend Pass: $30 Adults, $20 for Children (Ages 5-12)

For more information:

(214) 632-5537 & www.texaspinball.com

ColecoVision - the arcade experience brought to the home

One of the most successful home video game systems of the 1980s was Coleco Industries' ColecoVision. Though only in production for a couple of years, more than six million units were sold.



Its success was largely due to the excellent graphics and the arcade titles of the games – Donkey Kong being the most popular.

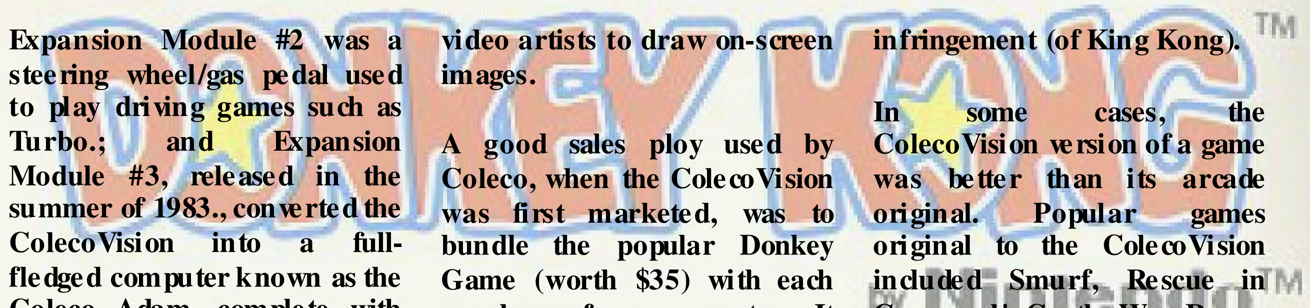
The ColecoVision was technically superior to its main competitors – the Mattel Intellivision and the Atari VCS, being powered by a Z80A CPU running at 3.58 MHz, having 8 KB RAM, 16 KB VRAM, three-channel sound and a powerful video display unit offering 16 colours, 32 sprites and a 256 x 192 resolution. At $175-195, it was around $80 more expensive than the Atari VCS, but customers were willing to pay a bit extra for the better quality graphics.

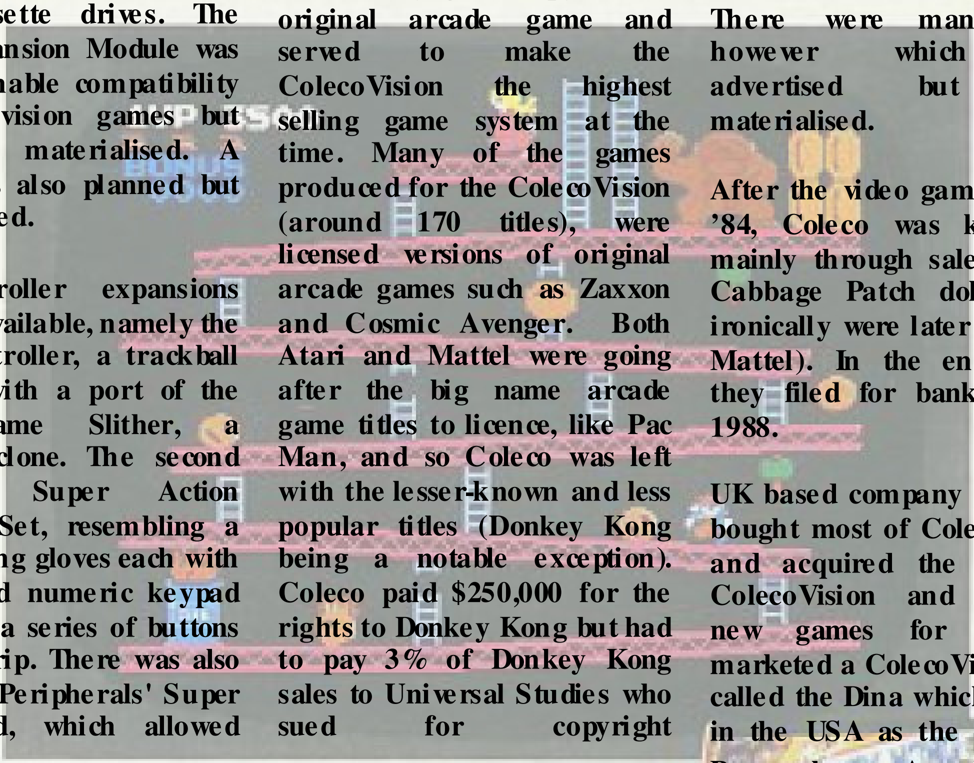
Outside of the USA, the ColecoVision was marketed by CBS Electronics as the CBS ColecoVision. It was not as well known as the USA version however.

Like the Intellivision the ColecoVision's controllers were rectangular and flat with a numeric keypad on the front and side buttons. There was a short joystick on the front and each controller connected into plugs in a recessed area on the top of the unit. The keypad was designed to accept a thin plastic overlay that mapped the keys for a particular game and each ColecoVision console shipped with two controllers.

> In 1983 Coleco's sales nearly tripled to $510 million

The Colecovision was the first system to offer the ability to play the games of other video game consoles. Expansion Module #1 enabled Atari VCS games to be played which meant the owner had a very large library of games to chose from. Atari sued Coleco for $850 million, but lost in court as it was found that as an Atari VCS could be made from common parts, there was no infringement. Coleco later released the Gemini console which was an Atari 2600 clone.





Expansion Module #2 was a steering wheel/gas pedal used to play driving games such as Turbo.; and Expansion Module #3, released in the summer of 1983., converted the ColecoVision into a full-fledged computer known as the Coleco Adam, complete with keyboard and digital data pack (DDP) cassette drives. The fourth Expansion Module was meant to enable compatibility with Intellivision games but this never materialised. A modem was also planned but never released.

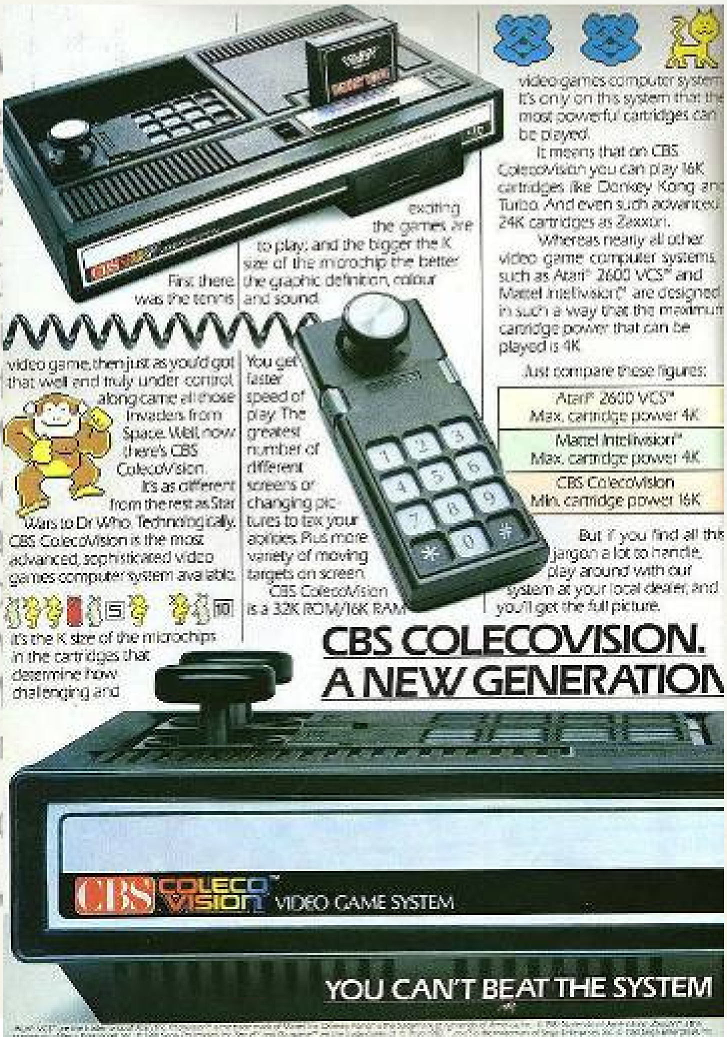
Two controller expansions were also available, namely the Roller Controller, a trackball packaged with a port of the arcade game Slither, a Centipede clone. The second was the Super Action Controller Set, resembling a pair of boxing gloves each with joystick and numeric keypad on top and a series of buttons along the grip. There was also a Personal Peripherals' Super Sketch Pad, which allowed video artists to draw on-screen images.

A good sales ploy used by Coleco, when the ColecoVision was first marketed, was to bundle the popular Donkey Game (worth $35) with each purchase of a game system. It was a very good copy of the original arcade game and served to make the ColecoVision the highest selling game system at the time. Many of the games produced for the ColecoVision (around 170 titles), were licensed versions of original arcade games such as Zaxxon and Cosmic Avenger. Both Atari and Mattel were going after the big name arcade game titles to licence, like Pac Man, and so Coleco was left with the lesser-known and less popular titles (Donkey Kong being a notable exception). Coleco paid $250,000 for the rights to Donkey Kong but had to pay 3% of Donkey Kong sales to Universal Studies who sued for copyright infringement (of King Kong).

In some cases, the ColecoVision version of a game was better than its arcade original. Popular games original to the ColecoVision included Smurf, Rescue in Gargamel's Castle, War Room, Illusions, and Fortune Builder. There were many games however which were advertised but never materialised.

After the video game crash of '84, Coleco was kept alive mainly through sales of their Cabbage Patch dolls (which ironically were later owned by Mattel). In the end though, they filed for bankruptcy in 1988.

UK based company Telegames bought most of Coleco's stock and acquired the rights to ColecoVision and produced new games for it. They marketed a ColecoVision clone called the Dina which was sold in the USA as the Telegames Personal Arcade. ■



First there was the tennis video game, then just as you'd got that well and truly under control, along came all those Invaders from Space. Well, now there's CBS ColecoVision.

It's as different from the rest as Star Wars to Dr Who. Technologically, CBS ColecoVision is the most advanced, sophisticated video games computer system available.

It's the K size of the microchips in the cartridges that determine how challenging and exciting the games are to play; and the bigger the K size of the microchip the better the graphic definition, colour and sound.

You get faster speed of play. The greatest number of different screens or changing pictures to tax your abilities. Plus more variety of moving targets on screen.

CBS ColecoVision is a 32K ROM/16K RAM video games computer system. It's only on this system that the most powerful cartridges can be played.

It means that on CBS ColecoVision you can play 16K cartridges like Donkey Kong an Turbo. And even such advance 24K cartridges as Zaxxon.

Whereas nearly all other video game computer systems such as Atari® 2600 VCS™ and Mattel Intellivision™ are designed in such a way that the maximu cartridge power that can be played is 4K.

Just compare these figures:

Atari® 2600 VCS™
Max. cartridge power 4K

Mattel Intellivision™
Max. cartridge power 4K

CBS ColecoVision
Min. cartridge power 16K

But if you find all thi jargon a lot to handle, play around with our system at your local dealer, and you'll get the full picture.

CBS COLECOVISION.
A NEW GENERATIO
CBS COLECO VISION VIDEO GAME SYSTEM
YOU CAN'T BEAT THE SYSTEM

Mattel handheld games

The first handheld electronic game for Mattel and for the world…

Primarily a toy company, Mattel decided to branch out into the electronic games market in the mid 1970s and produced the world's first truly electronic handheld game.

Auto Race was released in 1976 and served to test the market to see if handheld electronic games would be popular.
The game had an LED display (like all electronic games in the 1970s) and used 512 bytes of memory. The player would control a vertical line at the bottom of the screen which would have to get to the top of the screen four times (laps) to win. Other 'cars' or lines would be in the way and so the player had to swerve past them. The 'car' had four gears and the faster you made the car, the faster the other cars would come towards you.

Mattel sold enough Auto Race games to produce the next game, Football, which exceeded sales predictions. As many as 500,000 units were sold every week during 1978.

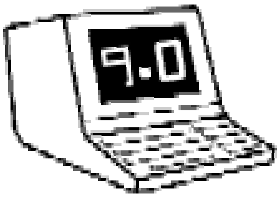
The early Mattel games, like other handhelds at this time, could use an AC adapter for power as opposed to just batteries, and had LED displays. Like other early handhelds, the early Mattel games were larger in size than later 80's ones. The early models were all programmed at Rockwell Microelectronics Division using modified calculator chips. Later games used programmable CMOS chips made (originally) by National Semiconductor.

Like a lot of handhelds of this time, many of the first Mattel games were sports games – e.g. Baseball, Hockey, Soccer, and then with the advent of LCD technology in the 1980s, there were more 'space' type games.

There were a few interesting oddities which didn't fit the standard game profile, notably the Horoscope Computer (1979) and Bowling (1979) which used mechanical 'flippers' to control the LED lights which represented the ball.

Mattel seemed to have high ambitions for some of their games and unfortunately this manifested in some of them being over-complicated. The Brain Baffler game was such an example. The packaging promises a lot of fun, but you needed a second player for most of the games, as the technology wasn't there to use the computer instead of a person. For instance in the game 'Anagram' – one of the players has to input a word into the computer, which is then scrambled, and then the second player has to guess what it was. Each game also required close reading of the instructions to fully understand them.

Despite some of their projects not being successful, Mattel, overall, produced original and popular toys and games, both before and after the legendary Auto Race and Football handheld games. ■



Vintage Computer Festival Europa

The ninth annual European Vintage Computer Festival awaits you!

Our mission is to encourage the preservation of obsolete computer hard- and software of years past, to promote interest in researching and documenting the history of the computer age ... and to have fun playing with old iron.

The Vintage Computer Festival is not only a fixed entry in the Silicon Valley timetable, but it has also become a European event, celebrating our computer heritage.

This year's focus is: **Game Computers - Computer Games**.

Exhibition

Speeches

Flea Market

Nerd trivia challenge

Where	Mehrzweckhalle des ESV München Ost
	Baumkirchner Straße 57
	81673 Munich
When	April 26th, 2008 from 1000 to 1830
	April 27th, 2008 from 1015 to 1700

Admission	**Pre Registration**	**At the Door**
One person -		
- One Day	-	EUR 5,-
- All Days	EUR 8,-	EUR 10,-
Family -		
- One Day	EUR 8,-	EUR 10,-
- All Days	EUR 15,-	EUR 18,-

Sinclair calculators – elegant little number crunchers

The Sinclair calculators proved that LED calculators need not be chunky black boxes that cost the earth.

Sinclair Radionics' first foray into calculators led to the launch of the Sinclair Executive in 1972. One of the first pocket sized calculators made and measuring 56 mm x 138 mm x 9 mm with a weight of 2.5 ounces, it was the first truly slim line calculator. Press reports praised the calculator, variously describing it as "a piece of personal jewelry" (*New Scientist*) and "at once a conversation piece, a rich man's plaything and a functional business machine" (*Design Magazine*).

In true Sinclair style, the Executive and all subsequent calculators, tried to make the internal electronics as few as possible so that the resultant product would be light and small. Sinclair found a way that his calculators could get away with using button cell batteries (as opposed to bulkier PP3 batteries). All calculators at this time used LED displays, which demanded a lot of battery power, and so button cell batteries would have been drained extremely quickly. To get around this problem they designed it so that power would be pulsed as and when needed, rather than be on continuously, and relied on the capacitance of the devices in the chip to retain information during a calculation. Even so, battery life was only a few hours and if the machine was left on, the batteries were even known to explode.

There was a normal 8-digit LED display but the keyboard was unusual in that it had little rubber keys. It was simple by today's standards – only being able to add, subtract, multiply and divide, with automatic squaring, reciprocals and a choice of fixed or floating decimal points. It won a Design Council award for its injection-moulded case, showing that Sinclair took care over not just the internal electronics but also the outer appearance. At £79.95 plus VAT it wasn't cheap to buy, but was comparable with other calculators of the time.

The first Executive was a major success, earning Sinclair over £1.8m in profits and was followed by the Cambridge series of calculators which were launched in 1973. Like the Executive, they were designed well and were small enough to fit in a shirt pocket. The Cambridge was cheaper than the Executive at £29.95 plus VAT (or £24.95 plus VAT for the kit form), but could handle more advanced functions such as trigonometry, nth root extraction and compound interest.

The Cambridge Scientific was then brought out which was slightly more expensive but could perform a number of common scientific features. Other ‘Cambridge versions followed, one of which was the Cambridge Programmable (marketed in the United States as the Radio Shack EC-4001),

The Cambridge calculators suffered from a design flaw, which would make the calculator impossible to switch off. The switch contacts were made of cheap tin-coated nickel (as opposed to gold-flashed nickel), which caused oxidation. After the on/off switch had been slid backwards and forwards a few times the surface of the tin would smear across the insulation so creating a permanent circuit. It was very inconvenient to have to take the battery out to switch the calculator off. Also, with two of the Cambridge models, the bulkier PP3 type batteries had to be used thus creating a more bulged appearance.

To compete with the Hewlett Packard HP-35 scientific calculator, the Sinclair Scientific was launched in 1975 in both assembled and kit form. Cheaper than the HP-35 at $100, it had fewer functions, but like the HP-35 used reverse Polish notation. Keys trebled up on functionality, important constants were printed on the case below the display, and the instruction book contained many useful keystroke sequences for common functions that were otherwise absent from the device - thus making the calculator quite versatile.

A problem with some of these calculators was breakage of the battery contacts, but fortunately if this happened, Sinclair fixed the calculator for free.

Gillette, the shaver manufacturer, decided to branch out into consumer electronics and commissioned Sinclair to design a Gillette calculator. The result was the Gillette GPA calculator, which was sold for a short period before Gillette decided to back away from this line of business.

Sinclair used the Gillette GPA as the basis for its Oxford calculator range, launched in 1975. These calculators were now around £12.95 plus VAT. The Oxford 150 could calculate percentages and square roots, and the Oxford 200 had a memory function. All the Oxfords had an 8-digit LED display and also used PP3 type batteries.

Next, Sinclair produced the Scientific Programmable Mark 2. This came with twelve sample programs, with another 294 contained in an additional four-volume library. Each volume was dedicated to a different application: finance and statistics, mathematics, physics and engineering, and electronics.

1976 saw the the Sovereign range of calculators which came in silver and gold plated models, with leather pouches and fitted wooden cases. The displays were 8-digit LED and there were four functions for percentage, memory, square root and square. A small number of solid gold ones were and a limited edition inscribed silver plated version was produced to commemorate the Silver Jubilee of Queen Elizabeth II in 1977.

The company was soon making a loss as LED calculators were being replaced with cheaper and more reliable far Eastern LCD versions. The closest Sinclair got to making an LCD calculator was with their Wrist Calculators kits, which were assembled out of redundant calculator chips and displays. Not very easy to make or wear, and not very reliable, these calculators were not a success. More than 10,000 Wrist Calculators were sold and another 20,000 were exported to the United States, but sales there were dismal.

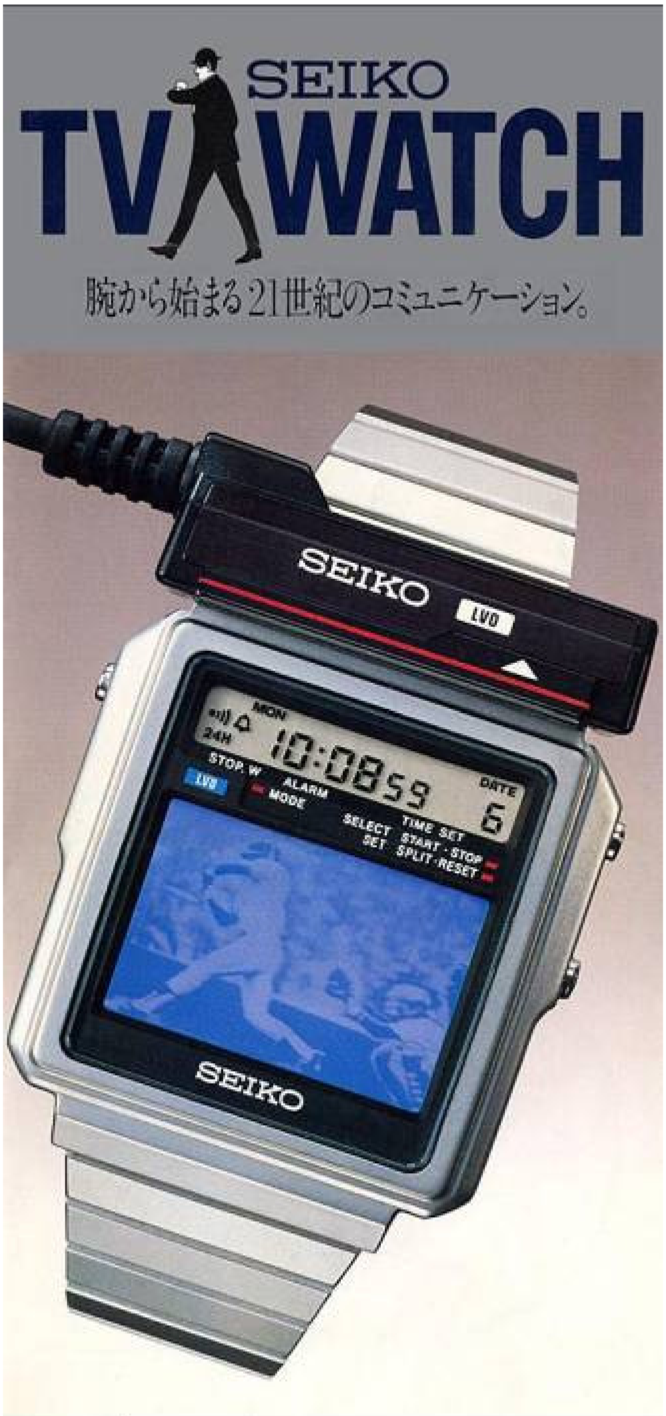
The Sinclair Enterprise (October 1977) and Enterprise Programmable (July 1978) were among the last generation of calculators with red LED displays. Again, neither calculator was a great success and both ended up being sold at a loss.

One of Sinclair's very last calculators, the President, was a desktop model released in February 1978, with the more advanced President Scientific released not long thereafter.

With the advent of more LCD calculators on the market, Sinclair’s calculator line was no longer profitable.■

Seiko TV-Watch and its legacy

If there is one gadget that typifies the early 1980s it would have to be the Seiko TV-Watch - not in the sense of it's popularity, but in its ambitions and design.



It was the world's first TV on a watch (although strictly speaking it was a display on a watch – the receiver being on a separate and much larger unit to the watch). It was also the only one of its kind for 20 years or so.

The Hattori Seiko Company presented to the Japanese public in 1982 the TV-Watch, priced at 108,000 yen. In the USA and other countries it was available from 1983 onwards for around $500.

In some early press reports the watch was referred to as the Suwa Seikosha TV watch as this is what Seiko was called before they merged with Epson in 1985. The name 'Seiko' was coined, as it was easier to say.

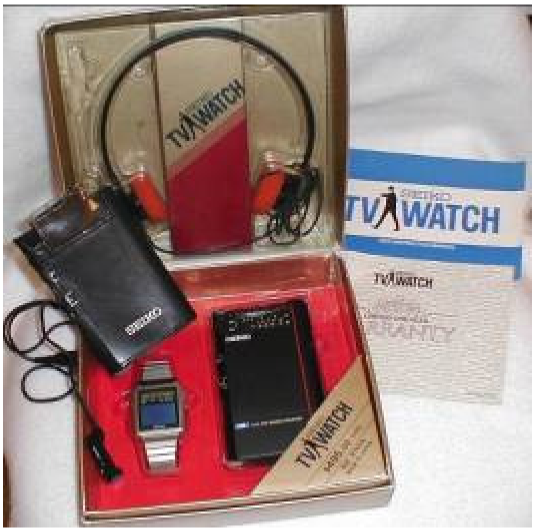
There were apparently two versions of the TV-Watch – model T001-5000 which was sold in a silver coloured box and had a silver protective pouch for the receiver unit, and the later T0001-5019 model which came in a gold coloured box.

The TV display, which measured 16mm x 25.2mm, was an active-matrix liquid crystal panel based on those that had originally been developed for watches, but modified to show moving images. The colours were blue/white and shades of grey. There was good visibility in daylight and it could run for 5 hours on one set of batteries. The watch itself also had stopwatch and alarm functions. It weighed just over 80 grams and had a stainless steel wristband.

An 80cm cable connected the watch to the receiver, which the wearer would have to put in a bag or in a pocket. The cable could be worn inside a shirt or coat sleeve to make it less conspicuous. Sound was listened to through the headphones.

The receiver was walkman-sized, weighed 190 grams and took two AAA size batteries. It could pick up VHF, UHF TV signals and FM radio signals. There was an optional AC adapter available.

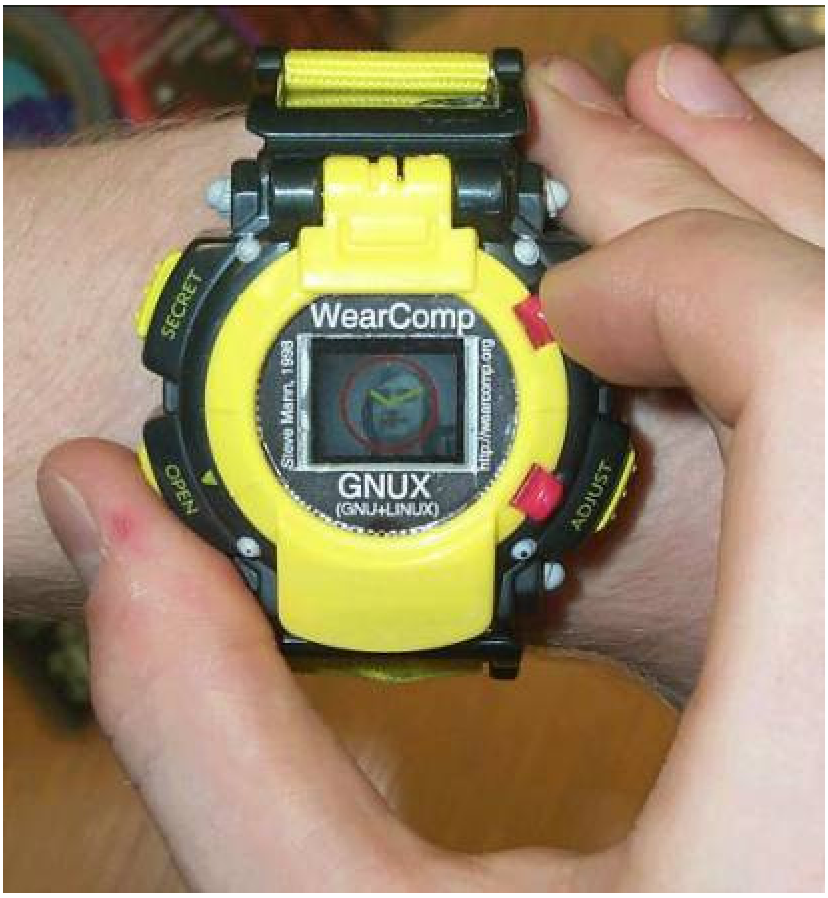
The TV-watch was used in some films of the time e.g. James Bond/Roger Moore wore one in the film Octopussy, and this served to emphasise how futuristic and glamorous a TV watch could be. It won the Nikkei Award for Superior Products & Services and was also recognized by the 1984 Guinness Book of Records as



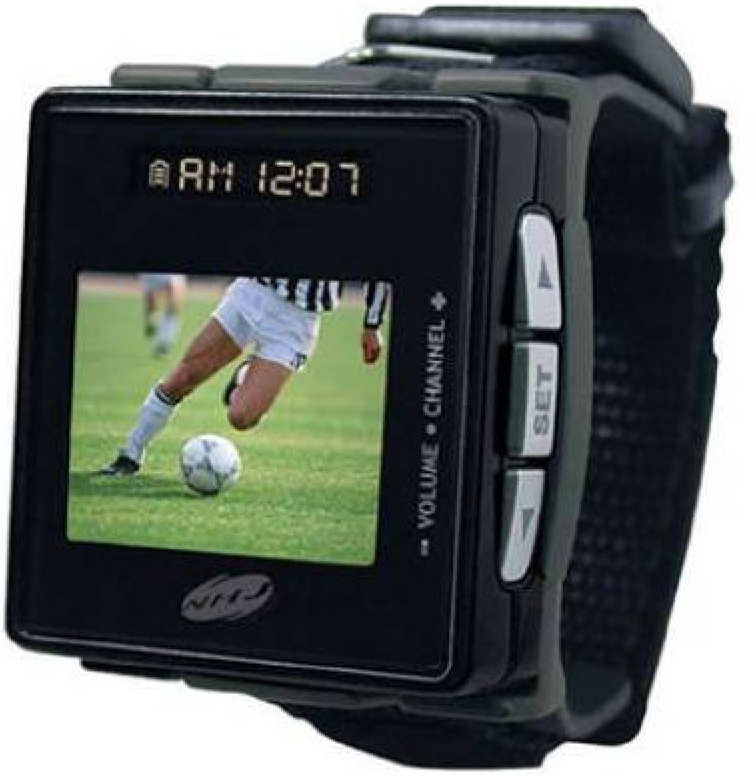
the world's smallest television.

It is interesting that no further watch TVs were produced since then. It has only been in the last few years that manufacturers have explored putting a TV in a watch again.

On sale today is the NHJ VTV-101 TV watch, which seems to offer a better viewing experience than the Seiko TV-Watch. The NHJ has a colour TFT LCD screen with a resolution of 280 x 220 pixels and doesn't require any separate device to work. The rechargeable battery only lasts an hour on full charge though, but it can be plugged into an AC outlet for continuous power. At around $100 it's also far cheaper than the Seiko was in its time.



Since 1998 a watch has been in development, which has integrated two-way videoconferencing and running the GNU+Linux operating system. This watch is able to download mpeg videos directly through a wireless Internet connection. Like the Seiko TV-Watch, it requires a separate device that is ordinarily concealed underneath clothing in order to process the images and transmit live video to the Internet, but work is in progress on developing the watch so everything can be processed in the watch itself without requiring a separate device.



Also on sale today is the Casio CMD-40 universal TV remote watch, which sells for $58. Whilst it's not a TV watch, it can be used to control a VCR or TV using its built-in IR sensor. Unless your normal TV remote control gets lost, it is unlikely that this watch would be much use however.

It is probable that TV watches (or watches with TV functions) have been produced with good intentions in mind but the reality of it that people don't want to wear something too bulky on their wrists and don't basically like to watch TV on a tiny display.

It will be interesting to see how successful future TV watches. In the meantime – hang on to your old Seiko TV-Watch, - it is a great collectors' item and is a perfect accessory for that retro occasion. ■

Early Technics receivers

A quick glance at some of these quality tuners…

The 1970s

The earliest models were produced from 1973. Technics 1970s receivers are characterised by the wood effect outer casing, silver control knobs, black display plate with blue, white or light green display meters. Average price was between $300-$800. The late 1970s saw the front display panel being all grey/white instead of black.

A notable receiver was the SA-1000, produced in 1978, which was nearly 40kg in weight, 63cm in width and cost $1700. This beast could generate 330 watts per channel, continuous power into 8 Ohm, both channels driven, with a 20Hz...20kHz rated power bandwidth and with no more than 0,03% THD distortion at 1kHz. With a 10mV reference signal, the s/n ratio was a great 97dB. Extra controls included "boost/filter" switches, plus a midrange centre-frequency adjustment.

The ST-9600 was also unusual in that it had controls for "servo tuning, a pink-noise generator, output level and MPX hi-blend; and output jacks for an oscilloscope.

The 1980s

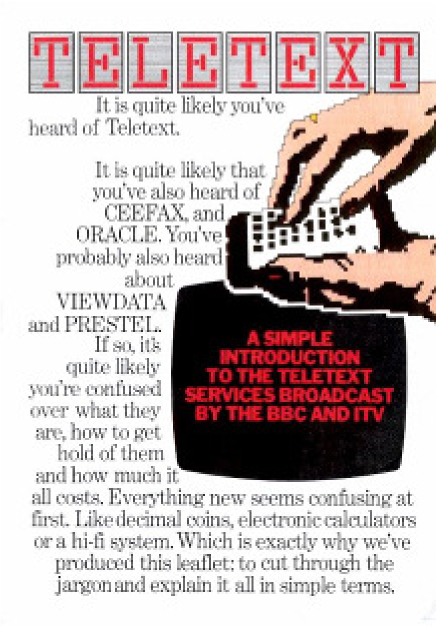
The 1980s saw an all-silver outer casing, replacing the wood from before, and with a silver front, but black display panel. The analogue meters were replaced with digital displays. The mid 1980s saw more push buttons replacing the flick switches and dial knobs from before, and then towards the end of the decade the receivers were in an all black casing. Average price went down to $200-$400.

Our new receiver demodulates or decodes any kind of 4-channel. Even some that haven't been invented yet.
Technics
by Panasonic

New features included Normal or Super Narrow IF bandwidth, signal strength readout in dB, a recording calibration tone, automatic selection of optimal reception mode, and an input for computers.■

The first one-way teletext services

Remember 'paging the Oracle' and waiting ages for each screen of information to appear on your TV set?



TELETEXT

It is quite likely you've heard of Teletext.

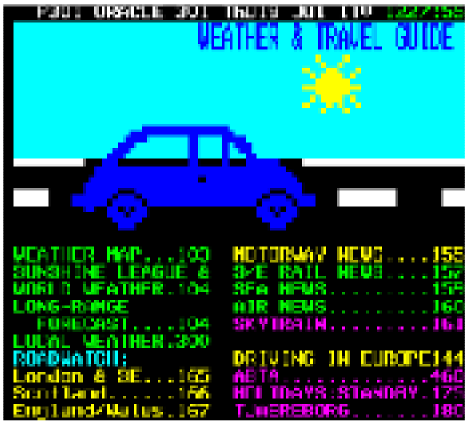
It is quite likely that you've also heard of CEEFAX, and ORACLE. You've probably also heard about VIEWDATA and PRESTEL. If so, it's quite likely you're confused over what they are, how to get hold of them and how much it all costs. Everything new seems confusing at first. Like decimal coins, electronic calculators or a hi-fi system. Which is exactly why we've produced this leaflet: to cut through the jargon and explain it all in simple terms.

A SIMPLE INTRODUCTION TO THE TELETEXT SERVICES BROADCAST BY THE BBC AND ITV

Videotex is commonly referred to when describing pages of information being requested and queried on a TV set or monitor, having being fetched through a phone line. Two-way videotex systems required a computer or dedicated terminal and/or keyboard, and offered the user the chance to interact with the system.
The following looks at the rise of teletext, or one-way videotex services, which only required a television set by the end user.

The oldest teletext, or one-way videotext service, was implemented by the BBC, in the UK, in 1970. Various sources have said either the service was started by transmitter-site technicians who wanted to communicate with each other; or that the BBC wanted to investigate ways that the deaf could obtain information from their television sets.

In 1972 the concept was made public under the name CEEFAX ('see facts') and patented under the name of Teledata which was the "The Transmission of Alphanumeric Data by Television". It was originally only 30 pages of news and information which would be continuously updated.

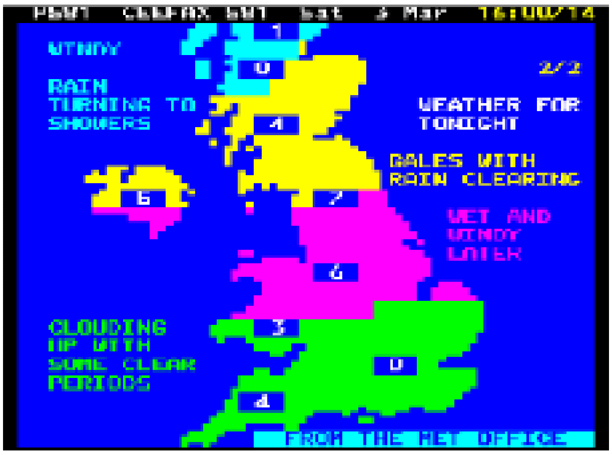


Soon after this time, rival TV station ITV and the Independent Broadcasting Authority (IBA) developed the ORACLE ('Optional Reception of Announcements by Coded Line Electronics') teletext system.

Also at this time British Telecom (BT) were developing their Viewdata system (which was later to be called Prestel as the term viewdata was considered too generic). All three services – Oracle, Ceefax and Viewdata agreed a common transmission protocol called Broadcast Teletext Specifications (BTS). The BTS display standard, called CEPT1, would be 40 x 24 lines of text with some graphics characters for making simple graphics.

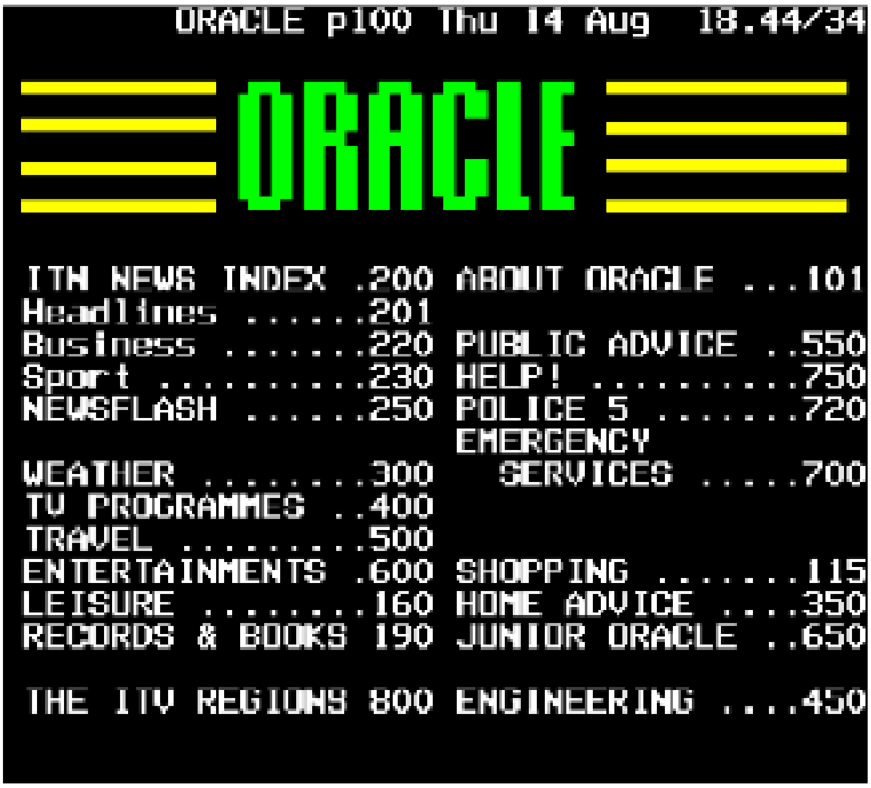
Prestel was not available to the public until 1979 and the service delivered via the home television was not interactive. It was not as popular to the general public as Ceefax and Oracle however, as the latter were free to use and delivered pretty much the same content as Prestel.

All of these services conformed to the idea that information came from a highly centralised location which users had little power to change or affect. Much like the provision of water or electricity or gas in the home, people in the 1970s saw computer information being delivered by a single source - much like having a 'National Computer Grid'.



The success of these early teletext services, in particular Ceefax, prompted other countries to follow suit with their own teletext services.

In Canada the Department of Communications developed Telidon which could deliver information via both the TV and phone line, but this wasn't very successful.



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ORACLE p100 Thu 14 Aug   18.44/34

ORACLE

ITN NEWS INDEX .200 ABOUT ORACLE ...101
Headlines ......201
Business .......220 PUBLIC ADVICE ..550
Sport ..........230 HELP! ..........750
NEWSFLASH ......250 POLICE 5 .......720
                    EMERGENCY
WEATHER ........300   SERVICES .....700
TV PROGRAMMES ..400
TRAVEL .........500
ENTERTAINMENTS .600 SHOPPING .......115
LEISURE ........160 HOME ADVICE ....350
RECORDS & BOOKS 190 JUNIOR ORACLE ..650

THE ITV REGIONS 800 ENGINEERING ....450
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The American TV network CBS were the first in the USA to try teletext, in 1978, using the Ceefax and the French Antiope software. The service went live on the KNXT (now KNXT) station in Los Angeles. Salt Lake City's KSL TV station also used Ceefax at this time for their teletext service.

Later, an official North American standard of teletext, called NABTS (North American Broadcast Teletext Specification) was developed, but owing to the high cost of the decoders it wasn't that successful. This was unlike the Ceefax system in the UK which was free and didn't have any monthly costs to be borne by the consumer.

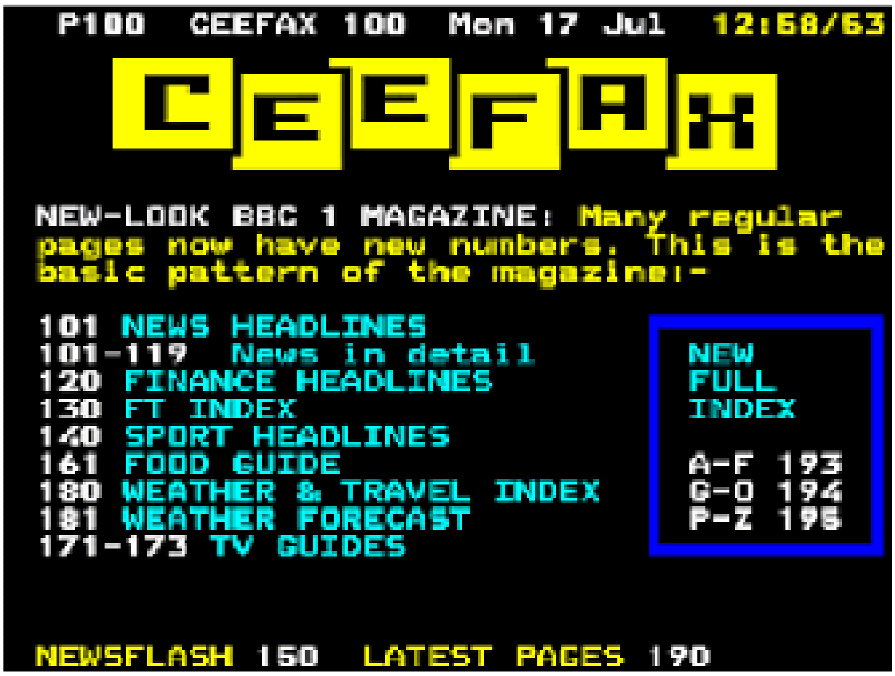
StarText , launched in 1982, was a hybrid teletext/two-way viewdata service developed by the Texas Fort Worth Star Telegram and the Tandy Corporation, that could only be used using a computer and modem. There were no graphics, pictures or colors and its subscribers, who were called 'StarTexans', had to pay $5.0 per month. The information was initially uncensored and unedited

Perhaps the most prominent of American teletext services was Electra which was broadcast in the early 1980s on WTBS. Part of the reason for its greater success was that Zenith TV sets (a popular make of TV set), had a built-in teletext decoders. When Zenith dropped the decoder feature from their TV line in the early 90's, interest in teletext services in general went down.

This seems to suggest that people were interested in teletext but only if it was easy to obtain and cheap, or better still, free of charge. The concept at the time was along the right lines of providing instant information on demand to the masses, but a few things led to its downfall, namely, the length of time it took to wait for pages to appear on screen, the limited information on the screen, the cost of using the service, the interruption of normal television program viewing on what might be the only set in a household, and the lack of ability to query the data further.

The most popular use of teletext appeared to be for the delivery of breaking news, in particular sports results, headline news, weather reports and stock market quotes. The ORACLE service in the UK used live instant subtitles for the first time in 1981 during the royal wedding between Prince Charles and Lady Diana.

Ultimately, all teletext services faded away with the arrival of mass use of the Internet in the mid 90s. ■



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CEEFAX

NEW-LOOK BBC 1 MAGAZINE: Many regular
pages now have new numbers. This is the
basic pattern of the magazine:-

101 NEWS HEADLINES
101-119  News in detail               NEW
120 FINANCE HEADLINES                 FULL
130 FT INDEX                          INDEX
140 SPORT HEADLINES
161 FOOD GUIDE                        A-F 193
180 WEATHER & TRAVEL INDEX            G-O 194
181 WEATHER FORECAST                  P-Z 195
171-173 TV GUIDES


NEWSFLASH 150  LATEST PAGES 190
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Interview with Don Wetzel, Co-Patentee of the Automatic Teller Machine

By Dr. David K. Allison

Wetzel graduated in 1951 with a bachelor of business administration degree from Loyola of New Orleans. That same year Wetzel began a career with IBM. After a seventeen-year stint with that corporation, Wetzel moved to the Docutel Corporation where in 1968 he immediately made his mark with his invention, one that literally has changed the way we live our lives and handle our money.

What was your position when you started with IBM?

At that time IBM had a subsidiary called The Service Bureau Corporation, and we processed applications such as payroll, accounts receivable, sales analyses. So when I started I was a machine operator. Then I moved to supervisor and then eventually became the branch manager in Fort Worth, Texas.

So what was it like being the IBM representative?

Well, in 1960, after I had worked with the banks for a couple of years as a salesman, I was promoted to special industry in banking for our district. I assisted the salesmen in the various offices in Texas, northern Louisiana, and New Mexico, trying to work with the salesmen to facilitate the sale to the bank in that particular area. Computers now had really come out. The bankers realized, well yes, we have to move forward and we are going to number our accounts and it looks like these computers will help us greatly. So it was exciting; those were exciting years.

What happened then?

I had an offer from a friend of mine who was a former IBMer to go to work for a company called Docutel and I took it as Vice President of Product Planning. I moved from Houston to Dallas. That was in 1968.

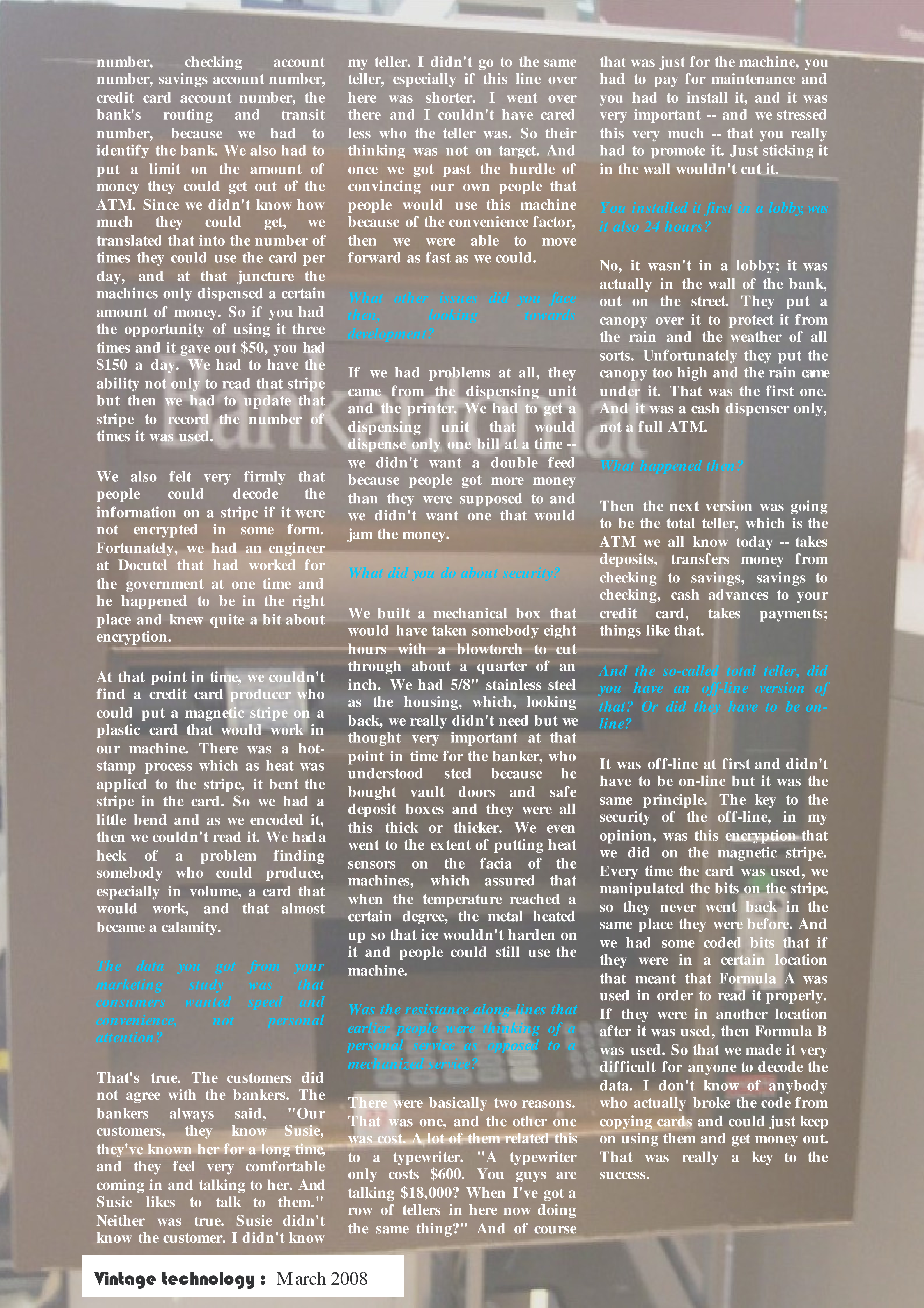
How did the ATM idea start?

I went back to our people at Docutel and told them I thought that we could build a machine that would perform at least 90 percent, perhaps more than 90 percent, of all the transactions processed by a teller. In Docutel it was well received, but we had a lot more work to do to determine whether it was worth proceeding with or not. At that point in time we never even thought of having off-premise ATMs as we see them today, you know, in shopping centres and supermarkets, universities, places like that. We were talking machines strictly located on bank premises. We didn't even feel that we would have one in every branch. We thought we'd get some key branches and the home office. But even then, the potential was very large and remember nobody else had a machine like this at this point in time. We determined that if we were the first ones out there, with the potential that the market presented, we would have a good product line for at least five years.

What technical issues did you face?

In those years there was very little on-line to the host computer - almost none, because those computers were used in a back-office environment. There were no such things as teller terminals and things like that as we know them today. So it was going to be an off-line machine. Knowing that, we had to build into it the necessary security because we weren't checking balances to see if you had the money in the account. Not only was it a technical problem to overcome, it was a problem in the minds of the banker to issue a card to somebody and not know whether he had the money in his account or not. But we thought we could get around that particular aspect of things. Then we faced the problem of what is going to be the activating device for this machine? When we were at this stage in late '68 and early '69, credit cards had started to come out, and these were just credit cards -- there were no magnetic stripes or anything like that.

We needed to store some data on this card in order for the ATM to do the functions that we wanted it to do. Data such as account



number, checking account number, savings account number, credit card account number, the bank's routing and transit number, because we had to identify the bank. We also had to put a limit on the amount of money they could get out of the ATM. Since we didn't know how much they could get, we translated that into the number of times they could use the card per day, and at that juncture the machines only dispensed a certain amount of money. So if you had the opportunity of using it three times and it gave out $50, you had $150 a day. We had to have the ability not only to read that stripe but then we had to update that stripe to record the number of times it was used.

We also felt very firmly that people could decode the information on a stripe if it were not encrypted in some form. Fortunately, we had an engineer at Docutel that had worked for the government at one time and he happened to be in the right place and knew quite a bit about encryption.

At that point in time, we couldn't find a credit card producer who could put a magnetic stripe on a plastic card that would work in our machine. There was a hot-stamp process which as heat was applied to the stripe, it bent the stripe in the card. So we had a little bend and as we encoded it, then we couldn't read it. We had a heck of a problem finding somebody who could produce, especially in volume, a card that would work, and that almost became a calamity.

The data you got from your marketing study was that consumers wanted speed and convenience, not personal attention?

That's true. The customers did not agree with the bankers. The bankers always said, "Our customers, they know Susie, they've known her for a long time, and they feel very comfortable coming in and talking to her. And Susie likes to talk to them." Neither was true. Susie didn't know the customer. I didn't know my teller. I didn't go to the same teller, especially if this line over here was shorter. I went over there and I couldn't have cared less who the teller was. So their thinking was not on target. And once we got past the hurdle of convincing our own people that people would use this machine because of the convenience factor, then we were able to move forward as fast as we could.

What other issues did you face then, looking towards development?

If we had problems at all, they came from the dispensing unit and the printer. We had to get a dispensing unit that would dispense only one bill at a time -- we didn't want a double feed because people got more money than they were supposed to and we didn't want one that would jam the money.

What did you do about security?

We built a mechanical box that would have taken somebody eight hours with a blowtorch to cut through about a quarter of an inch. We had 5/8" stainless steel as the housing, which, looking back, we really didn't need but we thought very important at that point in time for the banker, who understood steel because he bought vault doors and safe deposit boxes and they were all this thick or thicker. We even went to the extent of putting heat sensors on the facia of the machines, which assured that when the temperature reached a certain degree, the metal heated up so that ice wouldn't harden on it and people could still use the machine.

Was the resistance along lines that earlier people were thinking of a personal service as opposed to a mechanized service?

There were basically two reasons. That was one, and the other one was cost. A lot of them related this to a typewriter. "A typewriter only costs $600. You guys are talking $18,000? When I've got a row of tellers in here now doing the same thing?" And of course that was just for the machine, you had to pay for maintenance and you had to install it, and it was very important -- and we stressed this very much -- that you really had to promote it. Just sticking it in the wall wouldn't cut it.

You installed it first in a lobby, was it also 24 hours?

No, it wasn't in a lobby; it was actually in the wall of the bank, out on the street. They put a canopy over it to protect it from the rain and the weather of all sorts. Unfortunately they put the canopy too high and the rain came under it. That was the first one. And it was a cash dispenser only, not a full ATM.

What happened then?

Then the next version was going to be the total teller, which is the ATM we all know today -- takes deposits, transfers money from checking to savings, savings to checking, cash advances to your credit card, takes payments; things like that.

And the so-called total teller, did you have an off-line version of that? Or did they have to be on-line?

It was off-line at first and didn't have to be on-line but it was the same principle. The key to the security of the off-line, in my opinion, was this encryption that we did on the magnetic stripe. Every time the card was used, we manipulated the bits on the stripe, so they never went back in the same place they were before. And we had some coded bits that if they were in a certain location that meant that Formula A was used in order to read it properly. If they were in another location after it was used, then Formula B was used. So that we made it very difficult for anyone to decode the data. I don't know of anybody who actually broke the code from copying cards and could just keep on using them and get money out. That was really a key to the success.

Well, our biggest problem was our success. The time that we had a financial crisis on our hands was when we had the largest back order we ever had. We just didn't have the cash to pay the bills because we had all these orders and we'd gone into production and bought all this equipment and supplies to build and meet the delivery schedules. I also had a personal setback in 1970. My wife died of cancer. I remarried in 1972. My wife then, who was also a widow, had eight children. When we got married we wound up with 12 children. And I was doing an awful lot of travelling. I travelled almost every week somewhere, and it seemed like every time I hit the road and called home, something had happened -- you know, so-and-so broke his finger, or the principal wants to meet with you next Monday; something like that. She was trying to run this household with 12 kids running around and they were all at home. So I decided, in '73, that this was rather unfair and I really needed to stay home. So it was in '73 that I resigned from Docutel, and started my first company, called Financial Systems & Equipment.

Anything else that you would like to say?

I really think the future holds many great possibilities. I think the ATM was the first instance where a person had the opportunity to interface with a piece of machinery, and that allowed that person then to be comfortable with interfacing to other pieces that came out since then -- like PCs, as an example. And we all know the success of the PC. The future, without a doubt, is going to be more exciting than the past. ■

Beep! Please leave a message…70's/80s answer machines

In this day of free or cheap voicemail on cellular phones and VoIP services, it is easy to forget the recent past when people had to rely on a separate box attached to the phone to take their messages.

One of the first commercially viable answering machines was the Phonemate model 400 in 1971, which weighed a huge 10lbs and could hold 20 messages on a reel-to-reel tape. Like many of the early answer machines, there was a 'call screening' feature, which meant that the owner could interrupt a caller as he was leaving a message, in order to have a conversation with him. Some machines doubled up as dictating machines.

As microelectronics got cheaper in the 1970s, answer machines were made more available and got cheaper. By 1975 they cost on average $2-300. It was now cheaper to buy an answer machine than rent an answering service from an external company.

In the early 80's answer machines got even cheaper. Typified by using mini cassettes instead of reel-to-reel tapes and being flatter and smaller in size, often with wood effect casing. Other features included a remote control to activate recorded messages. Most had two cassettes – one for recording incoming calls and one for playing personal messages.

Radio Shack's Duofone TAD (Telephone Answering Device) range was very popular in the USA and was one of the first to use microprocessors.

In the UK Answercall machines cost around £200 and allowed you to pick up phone messages from any phone in the world. The Robin answer machine from BT in 1986 cost a huge £400. Both machines used voice activation to retrieve messages remotely.

At this time in the USA, it was after the phone company AT&T divested itself of the local operating companies and when really cheap machines manufactured in Asia flooded the market. Consumers no longer had to use expensive answer machines tied to a particular phone company, and this saw a drop in answering equipment rental.

The late 1980s saw answer machines having more push button controls rather than the dial knobs to select various program functions. They became smaller in size, often all in black or all white in colour. ■

auic

Retro Madrid

Madrid, february 2008

RetroMadrid 2008

RetroMadrid 08 will take place on the 8th of March, in Madrid. RetroMadrid, formerly known as MadriSX & Retro, is one of the biggest fairs in Europe specifically dedicated to vintage computers, consoles and games. In its 14th edition, MadriSX & Retro changes its name to RetroMadrid to reflect our support for the whole range of classic computers.

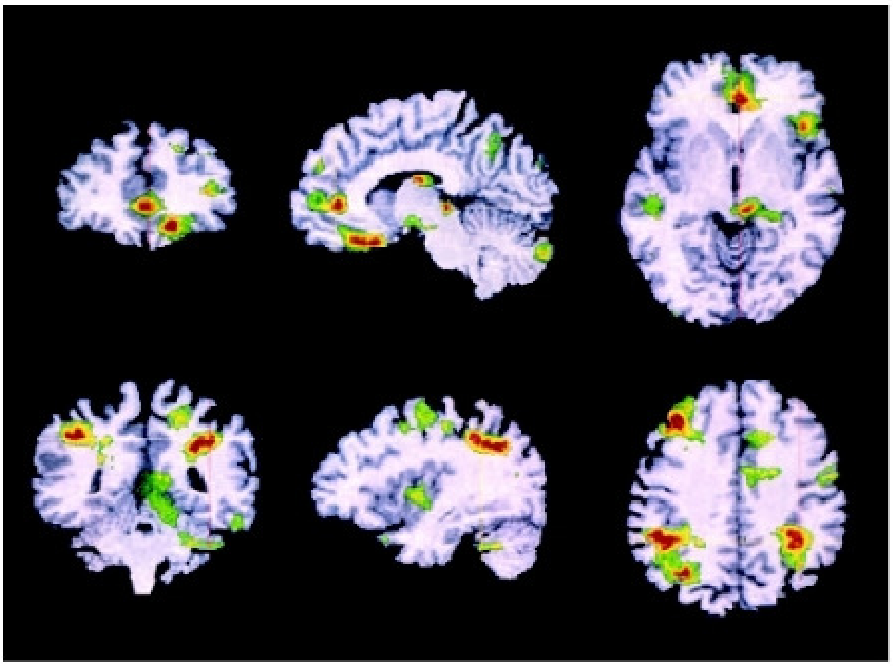
The ***Asociación de Usuarios de Informática Clásica*** (*Association of Classic Computers Users*, AUIC) is the entity supporting RetroMadrid. AUIC's aim is to promote the interest on vintage technologies among the general public.

RetroMadrid will include **competitions**, **sales zone**, demonstrations of **new software and devices**, and, of course, **exhibition of vintage consoles and computers**. Everybody is more than welcome to the fair and Madrid.

RetroMadrid: 8th of March, from 10,30 am to 6,30 pm. Centro Cultural El Greco; El Greco St., No Number (odd side). Underground Stations: Batán (Line 10) and Alto de Extremadura (Line 6). **Free entry**. For more information, please visit www.retromadrid.es, or send an email to informacion@auic.es.

When compulsive hoarding gets out of hand…

It is perfectly normal to collect stuff – man has been doing this since the beginning of time, and man and animals have always hoarded food to survive; but how do we know when our collecting habits go too far or whether the collecting bug is symptomatic of something more sinister?



The extreme end of collecting is called pathological or compulsive hoarding (medical term 'syllogomania', familiar term, 'packrat') and involves the following:

- Acquisition of a large number of possessions that appear to be useless.
- Failure to discard said large numbers of objects which are not used in any way
- Failure to discard said objects even when their storage causes rooms to stopped being used for their primary purpose.

The clutter causes doors to be blocked, tables to be no longer eaten from, sofas defunct and floor space a distant memory.

- Are you taking care of yourself – eating, sleeping, attention to personal hygiene etc?
- Are you depressed or overly preoccupied with unnecessary activites?

It is probable that extreme hoarding is symptomatic of other conditions, in particular obsessive-compulsive disorder (OCD) or impulse control disorder (ICD).

If there is an element of compulsive buying with the hoarding then it may be from ICD. With this condition there is often decision making

problems and also emotional attachments are formed with the items collected.

With OCD then the person will show more perfectionist, ritualistic behaviour which can often be very time consuming.

Those with attention-deficit hyperactivity disorder (ADHD) sometimes have hoarding tendencies.

Some scientific studies have shown that brain function may be slightly different for those who collect compulsively. Damage to the right mesial prefrontal cortex of the brain has been known to play a part, as it releases the primitive hoarding urge from its normal restraints.

In all cases there is a likely cause from nutrition deficiencies.

At the very extreme end of the compulsive hoarding spectrum is Diogenes syndrome which manifests itself in extreme self neglect and collection of other people's rubbish. This usually affects the elderly who live alone and can by symptomatic of senile or social breakdown.

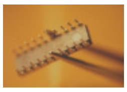
If all else fails, blame your parents for it is possible that the 'collecting' gene runs in families. Additionally, according to Sigmund Freud, extreme collecting could be caused by early potty training experiences in that when a child's output is flushed away he feels he has produced something of no value and he cant keep result of his labours. This in turn could lead to feeling a lack of power of some aspect of life. This theory should probably be taken with a pinch of salt however as most people want to have more control over their lives.

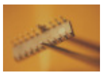
OCD disorders can treated with various antidepressants which will control but not cure the problem. A particular drug, paroxetine, has been used specifically for the treatment of compulsive hoarding. Cognitive behaviour therapy should also be used with any medication.

Examples of such therapy is to deal with the clutter one small area at a time as opposed to getting overwhelmed by huge areas of mess; make a rule to throw away something after a set period of time if it hasn't been used; and assign categories to objects which mean they are given a set place – e.g. shelve it, throw it out or sell it.

Sufferers should also ensure they are getting the right balance of vitamins and minerals in their diet.

To conclude, there is nothing wrong with a little eccentricity here and there – wouldn't life be boring if we were all normal? But if the collecting impairs general living and if you feel it's getting out of hand, you may just need to relax, eat better, go see your doctor or basically just be happy and accept the situation ;). ■





Adjusting CRT colour monitors

Got convergence, purity and greyscale problems on your monitor? Ray Carlsen of Carlsen Electronics gives some tips from the trade.

If you've never adjusted a monitor before, keep in mind there are dangerous voltages inside. The not-so-obvious danger is that monitors and TV sets are "line operated" devices which means that the chassis is "hot" to ground at all times and poses a lethal potential between chassis parts and other grounded objects around it. Technicians use a 1:1 isolation transformer to reduce the risk of shock and damage to equipment. You can work in reasonable safety if you keep other grounded objects (computer, drives, etc.) away from your work area. Touch only with one hand (put the other hand in your pocket... a habit I got into long ago) to reduce the risk of electrical shock. Taking a hit from arm to arm across the chest can stop your heart. Now, down to business...

Set-up adjustments are done by moving several sets of rings on the neck of the tube. The ones closest to the yoke (the large deflection coil assembly, mounted near the bell of the tube) are the two pole purity rings. Purity adjustments are necessary only if a blank white screen shows "blotches" of color.

The next pair of rings is a four-pole type that controls the red and blue static convergence (horizontal and vertical lines in the centre of the screen). The last pair of rings is a 6 pole to control the static alignment of magenta (red + blue) with green. Behind that pair of rings there is often a locking device. Each ring has two tabs that stick out to allow for adjustment with your fingers, a rounded end and a square end.

A picture tube is said to be in convergence when all three beams (primary colors of red, green and blue) overlap in all places on the screen. Misconvergence shows up as color "fringing" around the edges of objects anywhere on the screen. The convergence adjustments are normally "roughed in" before purity is adjusted because they interact with each other somewhat.

Convergence adjustment can be done by splitting or separating the tabs of a pair of rings in the necessary direction. That moves the beams in a horizontal direction and so affects vertical lines on the screen. Or adjustment can be made by rotating both rings together, and that moves the beams in a vertical direction, affecting horizontal lines. These adjustments interact with each other, so you must go back and forth between the two settings for optimal convergence. To be able to see the effect adjustments are having on the tube face, test patterns are recommended, the most common being a "crosshatch" pattern of a dozen or so horizontal and vertical white lines on a black background. The front panel color level control must be turned down so there is no residual color on the screen to confuse the readings.

If a lock is used on the

convergence ring assembly, it needs to be unscrewed (rotated counter-clockwise, looking at it from the rear of the tube) to unlock it. Otherwise you will break the rings attempting to move them. Back off the lock ring about one-half a turn. If it is left too loose, the adjustment rings will slip out of adjustment easily while you are working... too tight and they might break.

The glue (if it was used) on the rings holds them even if the lock is released, so you need to break the glue bonds between rings to be able to make adjustments. Use a sharp knife or flat blade screwdriver to gently pry between rings to free them from the assembly and from each other. Don't scrape the glue off. It's useful as a marker to see where the adjustments were... just in case. If there is no glue or marks of any kind, draw one with a magic marker or felt tip pen across the entire assembly before you begin. That way, if you get totally confused and mess up the adjustments, you can always put it back the way it was if you line up all the rings on your mark.
Since you will be working on a live chassis, it is assumed you already know your way around inside electronic equipment and will observe the proper safeguards.

Colour purity adjustments

Screen color purity doesn't normally drift very much over time and therefore doesn't require routine adjustment. Purity is said to be good if, when each color is turned on and the other two turned off, the entire screen is all one color. Bad purity will show up as wrong colors on what should be a pure color field, or color blotches on what should be a white screen (all three guns turned on).

There are internal controls for each CRT "gun" to set the brightness level for that color. To adjust green screen purity, turn down the red and blue guns with their respective controls and/or turn up the green. Each TV or monitor has it's own terminology for these controls. Some call them "low light", others "screen" or "G2" or "cut off", and still others "bias". These controls need to be reset to their proper points when purity adjustments are completed or the resulting offset "white balance" will show as "tinting" of one color over the entire screen when the brightness is changed.

An alternate way to do the setup without having to adjust any CRT level controls is with a generator or via a program in the computer feeding the monitor. For example, a simple BASIC program can be written to set foreground and background color to green only. Patterns of lines or dots can likewise be generated in a program.

To adjust purity, set up a green screen as indicated above. Loosen the yoke clamp and pull the yoke back towards the convergence assembly as far as it will go. If there is any glue or tape holding it, it may be necessary to gently twist the yoke to break it loose from the tube. A wide vertical bar of solid green should appear in the centre of the screen. If it's off centre, the purity rings should be rotated and/or separated to centre the green bar. Then slide the yoke forward just enough to get an overall green screen without contamination by red or blue. Use a bar or crosshatch pattern to make sure the yoke is straight (rotational misalignment will cause the picture to be tilted), and then gently tighten the yoke clamp.

It's a good idea to check the red screen purity, then blue. Slight adjustments of the rings or yoke position may be required to optimise the purity of each of the three-color fields. Some compromise may be necessary, but it's usually not important to get it perfect. It has to be pretty far off to show up on a white screen.

Convergence

For convergence adjustments, you need to use something to generate a pattern of horizontal and vertical lines on the screen called a "crosshatch" which can be a screen full of zeros or + signs. As stated before, the purity rings are the first set on the convergence stack behind the yoke. Don't adjust those unless you have to. The second pair of rings is used to converge the red and blue lines at the centre of the screen.
Separating the rings will move the beams horizontally (side to side), so for that adjustment, you must look at the vertical lines of the crosshatch to see the effect. Holding and moving both rings together moves the beams vertically. To see that effect, you need to watch the horizontal lines at the centre of the screen.

The third set of rings set the convergence of magenta and green. As before, looking at the centre of the screen, separating the rings allows for horizontal beam movement (observe vertical lines) and rotating both rings together moves the beams vertically (observe horizontal lines). All slot-mask picture tubes use a variation of this set-up procedure.

If the centre of the screen is properly converged but there is still misconvergence at the screen edges, you must tilt the -front- of the yoke up or down (without loosening the mounting clamp), or side to side for compensation while observing a crosshatch pattern on the screen. Note that up/down movement of the yoke will affect convergence at the screen left and right sides, and side-to-side movement of the yoke will affect screen edge convergence at the top and bottom of the screen. Smaller tubes don't normally require adjustment, but larger screen sizes can show quite a bit of misconvergence at the edges. When adjustment is optimised, small rubber or plastic wedges are used to hold the yoke in place but sometimes these blocks fall out. If edge convergence is bad and centre convergence is OK, look for loose or missing blocks.

Greyscale

The highlights/lowlights controls set the voltage levels that appear on each of the three color "guns" of the CRT. The highlights or bright areas of the image are set with the "background" or "drive" controls, and the lowlights are set with the "screen", "cut-off" or "G2" controls. These controls may be located on the CRT neck board (the board that plugs directly onto the picture tube), or on the main chassis along the rear panel. They are normally adjusted by use of a small, flat blade screwdriver with an insulated (plastic) handle.

To prepare the monitor for adjustments, turn the color level (intensity) control all the way down. You don't want any color from the video to offset the adjustments you are trying to make. Feed a video signal from a video game or computer into the monitor so you have a fixed stable image with an average of highlights and lowlights. As an alternative, just use the brightness control on the front panel to run the "raster" (blank screen) brightness up and down and make the adjustments for low and high levels that way.

For only a minor correction of CRT greyscale, inspect the image to see which areas of the picture are not neutral grey or white. If it's the dark areas (low brightness off-color), use the "cut-off" control for the predominant color (green in your case) and back that control down until the screen looks grey. Adjustment of the other two cut-off controls may be necessary to get it looking just right, but don't adjust any control more than a few degrees. Color balance offset in the dark areas will show up more than a similar offset in the highlights, and some "drift" is normal as the monitor ages.

If the white areas of the image are affected, back down the drive control of the predominant color or raise the others to match so you have a neutral white in the highlights. You may have to make minor adjustments to both sets of controls so all levels of brightness are neutral grey when you're done. Run the front panel user brightness up and down to see if the raster "tracks" properly (doesn't change color off neutral grey).

Some monitors have an internally adjustable brightness control which is normally located on the main board and may be called "sub-bright" or "bright limit". It is normally set to produce a good picture with the front panel brightness control set in the middle of its range.

One last setting you might need to make at some point is the master screen or G2 adjustment. It's a -very- coarse adjustment that sets the overall level of brightness. As a tube ages, the G2 may need to be set higher to compensate for a low-brightness problem. If this control is set too high, the image may be too bright and/or take on a milky appearance with faint diagonal "retrace" lines in the picture. If set too low, you will not have enough brightness even with the front panel brightness control at maximum. This master screen is on the fly back (line output) transformer, the large black plastic block usually located at the right rear of the main chassis.

Intel Museum

At the Intel Museum in Santa Clara, one can experience the power of computer chips first hand, and the evolution of their development.

Visitors can experience what it's like inside the ultra-clean, highly automated factories where Intel makes silicon chips, trace Intel innovations, learn about Intel's culture and business practices, and see how new technologies are changing the way people work, learn, play, and communicate. The 10,000-square-foot museum has over 30 hands-on exhibits that appeal to both children and adults. Exhibits change frequently to keepup with the pace of technology.

The museum is designed as a self-guided experience. Visitors may enhance their visits with video and interactive activities provided on state-of-the-art audio tour units. The audio tours are available in English, French, German, Japanese, Korean, Mandarin Chinese, and Spanish, and are free of charge.

The museum also manages the Intel Corporate Archives. Online access is available to view the most popular historical documents and images, including one-on-one interviews with employees on their Intel experience and special memories.

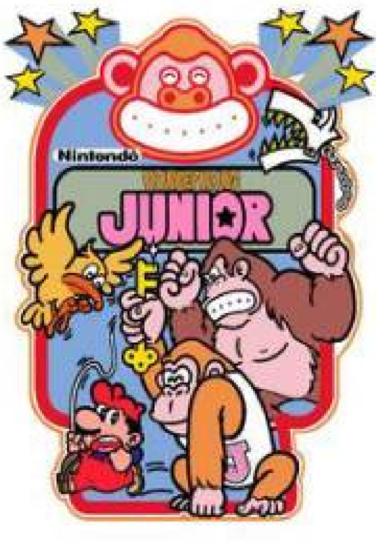
Close to 80,000 people visit the Intel Museum each year.

Visit: Intel Corporation's Robert Noyce Building, Main Lobby, 2200 Mission College Boulevard
Santa Clara, California.
www.intel.com/museum

Chris Newton's online collection of Arcade Art

Both arcade collectors and anyone else who needs a great picture to hang in their den, will find this an interesting collection of arcade cabinet marquee and side art, control panel overlays, cabinet bezels, company logos, character and instruction card art.

Visit:
www.localarcade.com/arcade_art

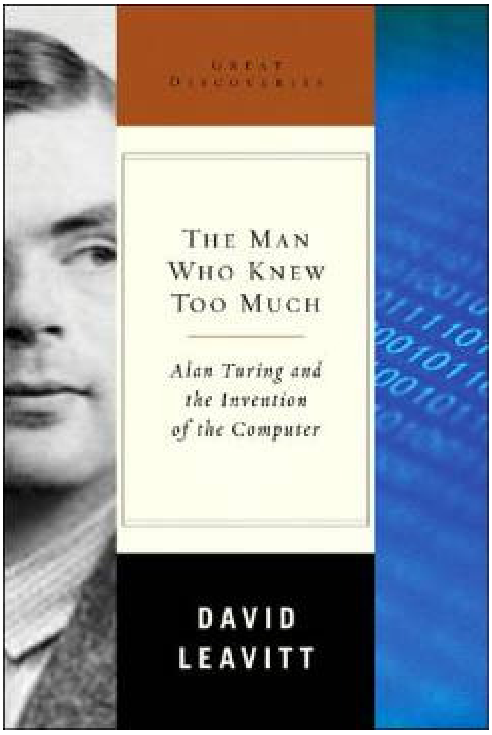


The Man Who Knew Too Much: Alan Turing and the Invention of the Computer

by David Leavitt

To solve one of the great mathematical problems of his day, Alan Turing proposed an imaginary programmable calculating machine. But the idea of actually producing a "Turing machine" did not crystallize until he and his brilliant Bletchley Park colleagues built devices to crack the Nazis' Enigma code, thus ensuring the Allies' victory in World War II. In so doing, Turing became a champion of artificial intelligence, formulating the famous (and still unbeaten) Turing Test that challenges our ideas of human consciousness. But Turing's post-war computer-building was cut short when, as an openly gay man in a time when homosexuality was officially illegal in England, he was apprehended by the authorities and sentenced to a "treatment" that amounted to chemical castration, leading to his suicide. With a novelist's sensitivity, David Leavitt portrays Turing in all his humanity-his eccentricities, his brilliance, his fatal candour-while elegantly explaining his work and its implications.

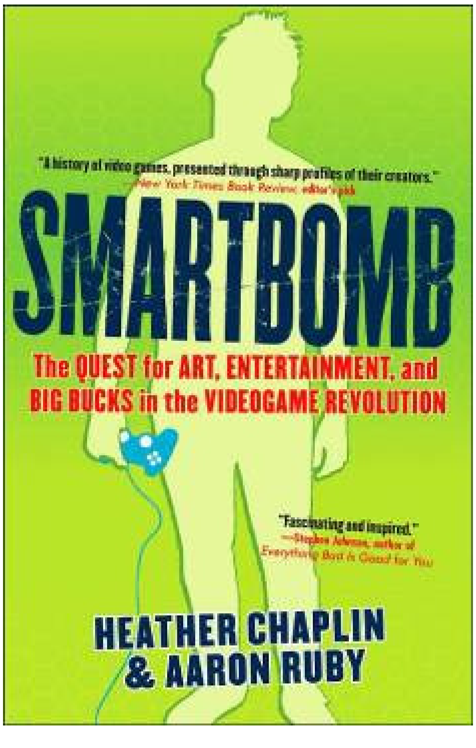
This book portrays the work of Turing well and shows how his work influenced modern computers, but in some places there is too much unnecessary detail, so that it becomes more like a crypto-analysis text book rather than a biography. It would also have been nice to have more about Turing's personal life other than the fact he was homosexual.


GREAT DISCOVERIES
THE MAN WHO KNEW TOO MUCH
Alan Turing and the Invention of the Computer
DAVID LEAVITT

Paperback, published by Phoenix 2007; £6.99 on Amazon; 320 pages.

Smartbomb: The Quest for Art, Entertainment, and Big Bucks in the Videogame Revolution

by Heather Chaplin and Aaron Ruby


"A history of video games, presented through sharp profiles of their creators."
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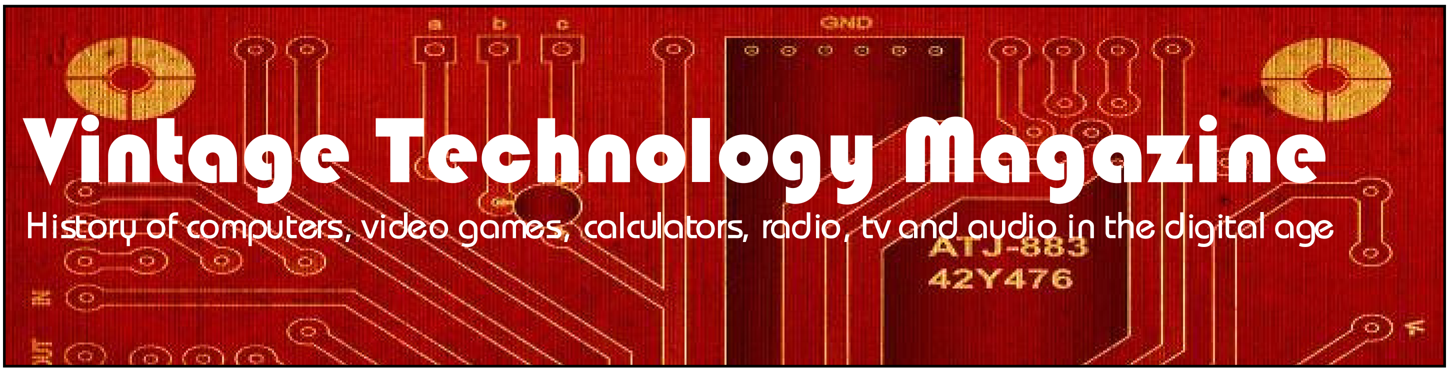
SMARTBOMB
The QUEST for ART, ENTERTAINMENT, and BIG BUCKS in the VIDEOGAME REVOLUTION
"Fascinating and inspired."
—Stephen Johnson, author of Everything Bad Is Good for You
HEATHER CHAPLIN & AARON RUBY

This tells the tale of modern games' formation via the personal stories of the people who make them. Both Heather and Aaron weave the kind of prose that makes you want to turn just one more page. If you liked books such as 'Masters of Doom', then this is for you. There is a lot of insight into the companies and individuals that make the games industry what it is today. There is just enough detail to enable a lively pace of reading and each chapter is like a mini novel.
Whilst the human nature of the founders of this industry has been explored, it could have been expanded further, especially as this would have made this book stand out more from the previous books on this subject. The anecdotes and stories, however, whilst they may have been told before, make for an interesting read. Notable in this book is the description of involvement of the military in the gaming industry.

Paperback, published by Algonquin Books in 2006; 304 pages; price £6.37 on Amazon



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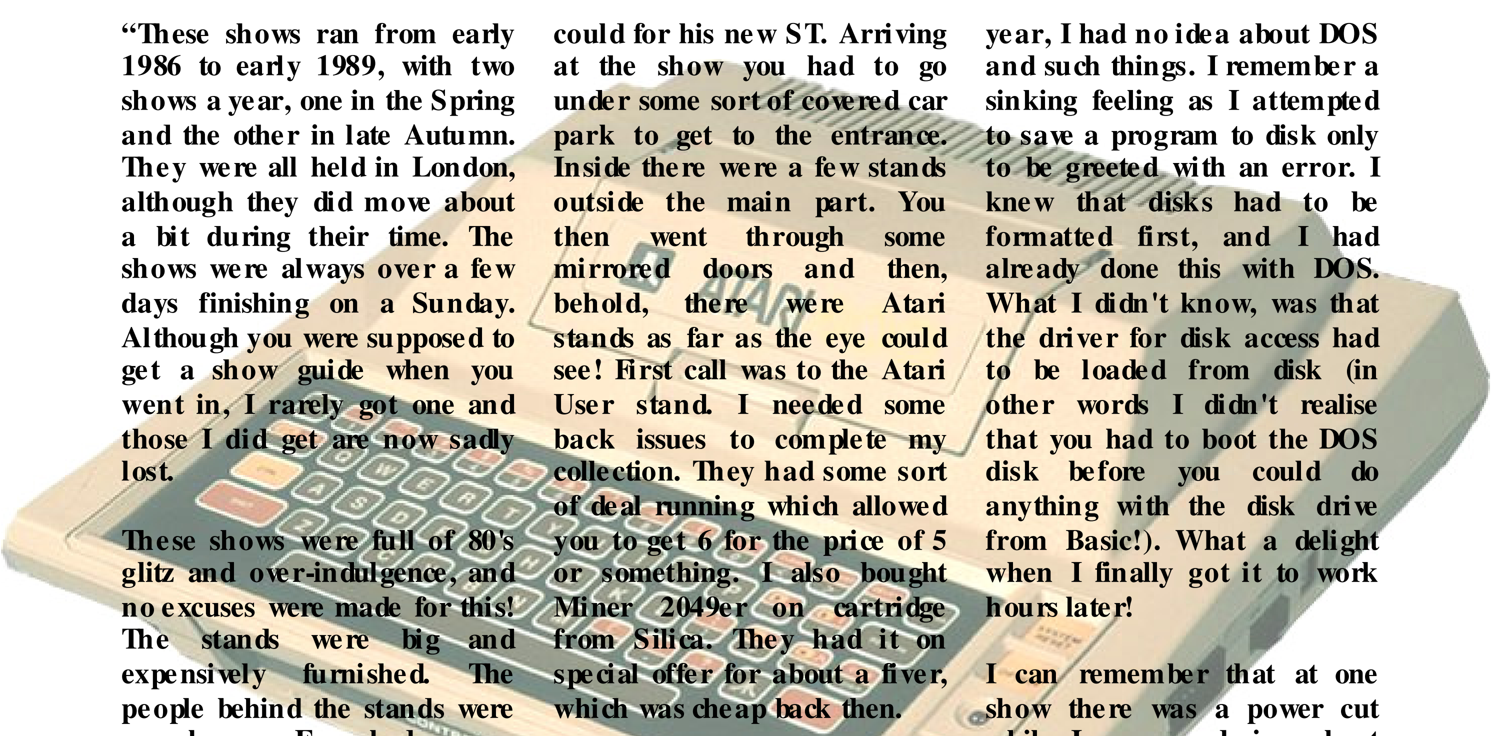
The Atari User shows

Dean Garraghty reminisces…



“These shows ran from early 1986 to early 1989, with two shows a year, one in the Spring and the other in late Autumn. They were all held in London, although they did move about a bit during their time. The shows were always over a few days finishing on a Sunday. Although you were supposed to get a show guide when you went in, I rarely got one and those I did get are now sadly lost.

These shows were full of 80's glitz and over-indulgence, and no excuses were made for this! The stands were big and expensively furnished. The people behind the stands were over-keen. Everybody was trying to out do everyone else. But all this just made it more fun for the visitors. Also, the organisers had some deal going with a local TV hire company. If you wanted to use a TV at the show (and let's face it, everybody would need a TV), you HAD to hire it from the organisers at some total rip-off price. You could not just bring your own. The organisers must have made a fortune out of these shows.

I was a mere lad when I attended that first show in 1986. I went down on the train on the Sunday with very little money in my pocket but plenty of excitement! I had never been to a computer show before and I had no idea what to expect. I can clearly remember that first journey down.

While walking to the show from the station, I met up with an American guy who was on his way there too. He was wanting to buy whatever he could for his new ST. Arriving at the show you had to go under some sort of covered car park to get to the entrance. Inside there were a few stands outside the main part. You then went through some mirrored doors and then, behold, there were Atari stands as far as the eye could see! First call was to the Atari User stand. I needed some back issues to complete my collection. They had some sort of deal running which allowed you to get 6 for the price of 5 or something. I also bought Miner 2049er on cartridge from Silica. They had it on special offer for about a fiver, which was cheap back then.

I spent hours going around all those stands. Rows and rows of them… I picked up loads of free catalogues and other bits and pieces people had stuck in my hands on the way round.

At the next show later that year, I had loads of money to spend and it was at this show that I bought my first 1050 disk drive.

Visitors to this show may well remember a large guy shouting the odds about having software at bargain prices. He had a big mound of software behind him which all looked a bit battered. I asked him about how to transfer tapes to disk and he obviously didn't have a clue about anything! He just shoved a bit of paper in my hand and said ring this number and ask. I can remember getting home from that show as though it were yesterday - I dashed straight in to try my new drive. For some reason, the first thing I tried was to copy some Basic programs from tape to disk. Being a tape only user for a year, I had no idea about DOS and such things. I remember a sinking feeling as I attempted to save a program to disk only to be greeted with an error. I knew that disks had to be formatted first, and I had already done this with DOS. What I didn't know, was that the driver for disk access had to be loaded from disk (in other words I didn't realise that you had to boot the DOS disk before you could do anything with the disk drive from Basic!). What a delight when I finally got it to work hours later!

I can remember that at one show there was a power cut while I was wandering about near the Page 6 stand. It only lasted a couple of minutes, but obviously when the power came back on all the machines started re-booting. A guy was talking to a load of people and said "Ah, yes that's called re-booting", and everybody looked really impressed and stunned at his apparent technical knowledge!

At the very last show in 1989, there were very few 8-bit suppliers there. It had gone virtually all ST by that stage. There were some bargains to be had though. There was a stand selling off 8-bit tapes and cartridges. The guy behind the stand was a bit sure of himself, and kept having what he described as "a mad moment" during which he would sell stuff off at a stupidly low price. Luckily for me he had one of these moments and plonked a load of cartridges on the stand and said "10 quid the lot. You've got 10 seconds to say yes starting now!" I stood there looking cool even though

I knew I was getting an amazing deal. I said "Throw in some of these disks and I'll think about it!" whilst pointing at some disk-based stuff. He said, "I'm throwing in nothing!" so I said "OK, don't want them then!" I was just about to walk off when he agreed to throw in some more stuff got about £100 worth of stuff for a tenner!

After that last show in April 1989, the Atari User show merged with other shows that Database Exhibitions organised including one for the old BBC Micro. ■

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